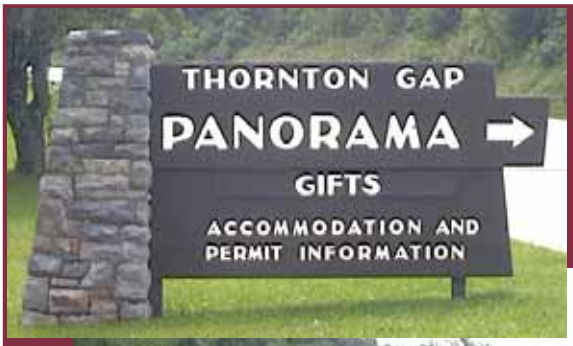
Rehabilitation of Panorama as a Visitor/Education Center

Shenandoah National Park
Page and Rappahannock Counties, Virginia



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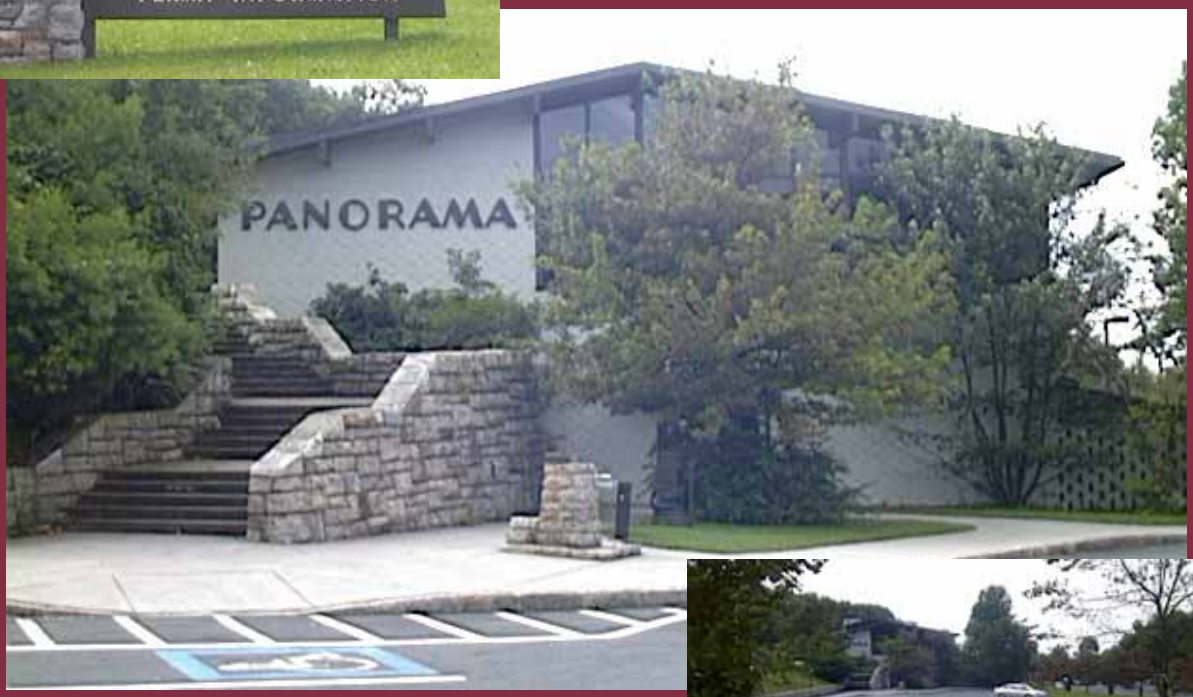

September 2004

National Park Service
U.S. Department of the Interior

Rehabilitation of Panorama as a Visitor/ Education Center

Environmental Assessment

Shenandoah National Park
Page and Rappahannock Counties, Virginia

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INTRODUCTION

PURPOSE AND NEED FOR ACTION

At Shenandoah National Park, Page and Rappahannock counties, Virginia, the National Park Service proposes to rehabilitate and remodel the Panorama building, construct a 2,820 square foot, 2-story addition to the building, and install/upgrade approximately 3,000 feet of waterline in an existing utility corridor.

This action is needed to increase visitor safety; provide safe working conditions; provide for handicap access; improve visitor experience and increase visitor knowledge, appreciation, and enjoyment of park opportunities and resources; and increase the efficiency, reliability, and sustainability of park operations. The Panorama facility is located at the intersection of U.S. 211 and Skyline Drive. Installing/upgrading the waterline is required to provide adequate water flow for fire suppression at the Panorama building. **Figures 1a** and **1b** provide a general site map for the Panorama project area. The existing Panorama building is shown in **Figure 2**.

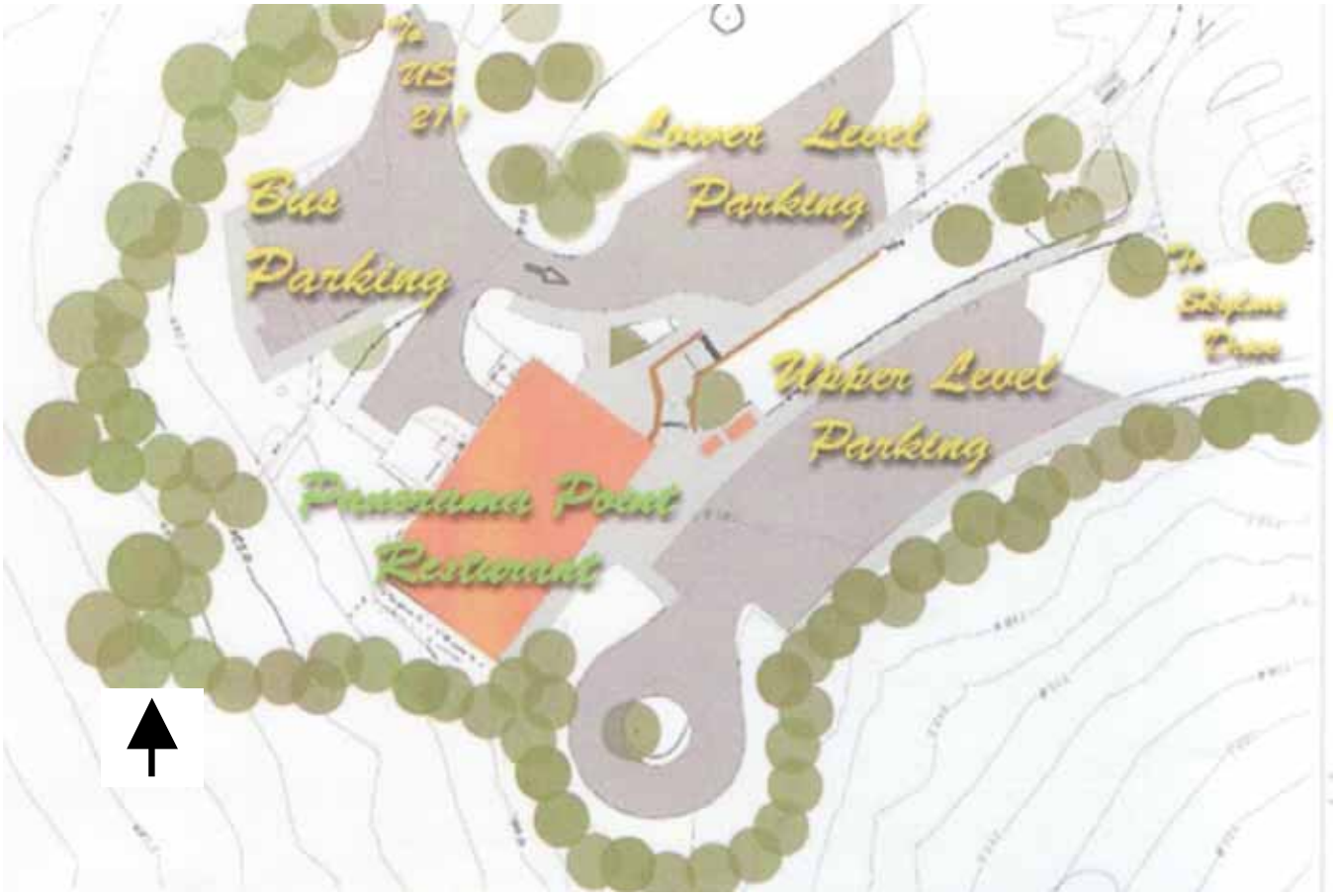

Figure 1a. Existing Site Layout

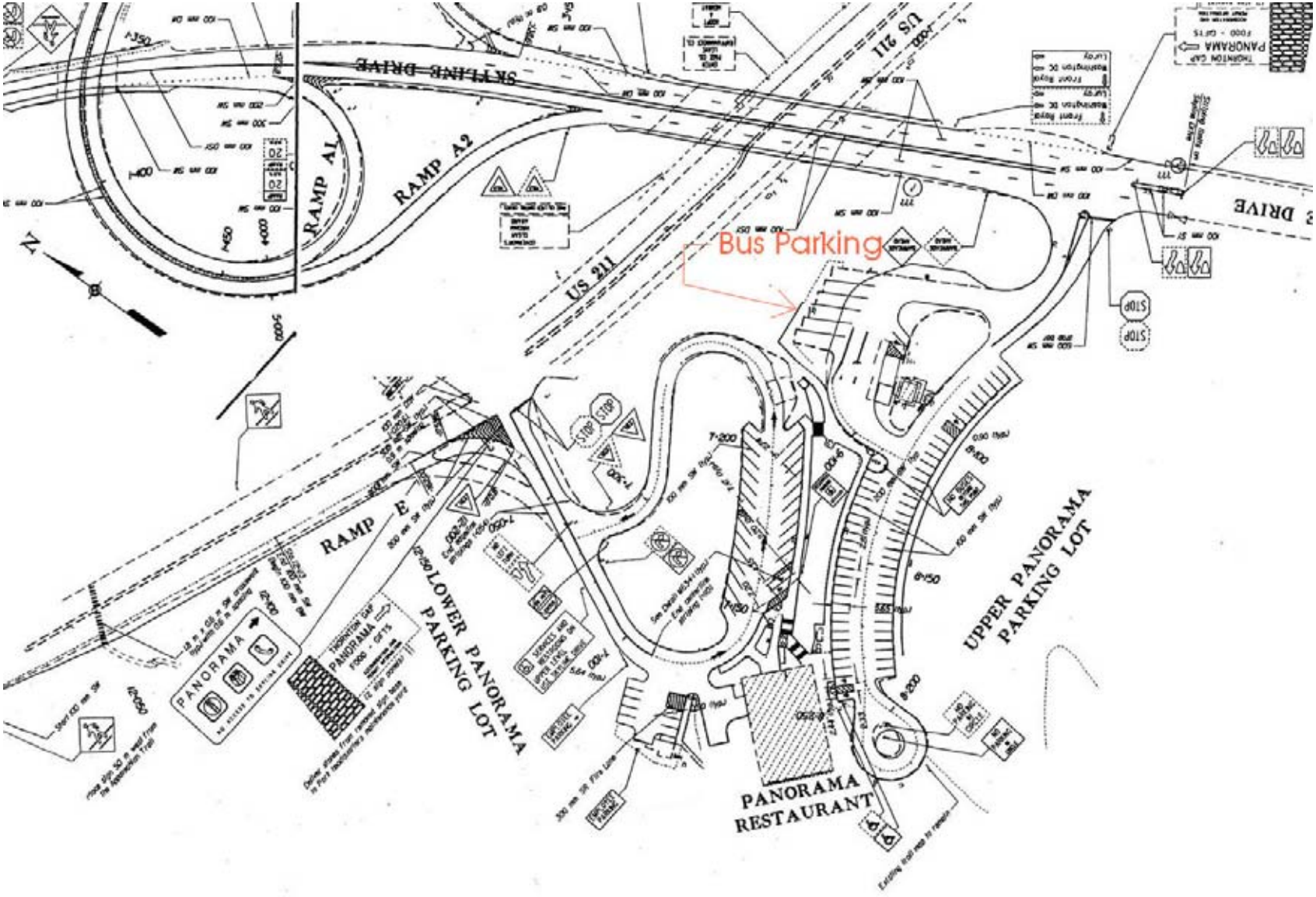

Figure 1b. Existing Layout of Panorama Parking Areas

THE ENVIRONMENTAL ASSESSMENT

This environmental assessment (EA) analyzes the environmental impacts that would result from the two alternatives considered, including the No Action alternative. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (USC) 4321 et seq.), the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500 through 1508) for implementing NEPA, the NPS NEPA compliance guidance handbook (DO-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*), and the National Historic Preservation Act of 1966 (NHPA), as amended (16 USC 470 et seq.).

Figure 2. Existing Panorama Building

PURPOSE AND SIGNIFICANCE OF THE PARK

Shenandoah National Park is a vital part of America's national system of parks, monuments, battlefields, recreation areas, and other natural and cultural resources. Authorized by Congress in 1926, established in 1935, and dedicated in 1936, Shenandoah National Park is located along the crest of the Blue Ridge in Virginia. Containing approximately 196,000 acres, the park preserves an outstanding representation of the Blue Ridge/Central Appalachian biome and makes this valuable part of America's heritage available to over 1.7 million visitors each year for their experience, enjoyment, understanding, and appreciation. Please see the Shenandoah National Park Strategic Plan (NPS, 1997e) for more information.

Park Purpose

Based upon legislation and legislative history, Shenandoah National Park was established for the following purposes:

- To protect the natural and cultural resources of the northern Blue Ridge and immediate area;
- To have a "National Park" here, at this location, providing scenery, serving as a refuge and pleasuring ground, and including the developed visitor amenities traditionally found in other "National Parks;" and

- To construct and maintain a "sky-line drive" to provide outstanding views of the scenic and historic Shenandoah Valley and Piedmont of Virginia.

Park Statement of Significance

Shenandoah National Park is significant for the following reasons:

- Shenandoah National Park is a "National Park" in the traditional "western" sense of panoramic scenic vistas, located in the east.
- Shenandoah National Park is nearby to large metropolitan populations, providing relatively good accessibility to millions of citizens.
- Shenandoah National Park provides recreation and "re-creation," in the historic context of personal contemplative pleasure.
- Within the historic context of the time in which the park was established, Shenandoah National Park represented a conscious change in human use of the land rather than the preservation of unimpaired resources.
- Shenandoah National Park is a sizeable "natural area" with large areas of designated wilderness and is an outstanding example of the Blue Ridge/Central Appalachian biome.
- Skyline Drive and the associated developed areas at Simmons Gap, Lewis Mountain, Big Meadows, Skyland, Piney River, Pinnacles, Dickey Ridge, and park headquarters are listed on, or determined eligible for, the National Register of Historic Places (NRHP). This national significance stems from their association with the Civilian Conservation Corps (CCC), the Works Progress Administration, and several hundred architectural and landscape features that are highly representative of their type.
- Camp Hoover, the Rapidan Camp of Herbert and Lou Henry Hoover from 1929 to 1933, is a National Historic Landmark. It served as the summer "White House" during the Hoover presidency, was the site of many national and international policy meetings, and retains significant rustic architectural and landscape architectural structures and features.
- The Appalachian Trail is the backbone of the park's trail system, includes fine examples of early trail construction techniques, and is the longest segment of the Trail in a "National Park."

Park Mission

Shenandoah National Park restores, where appropriate, and maintains the park as a functioning ecosystem that is the outstanding representative of the Blue Ridge/Central Appalachian biome. The park provides present and future generations outstanding opportunities to experience "recreation and re-creation" by driving the Skyline Drive, walking the Appalachian Trail and related trails, or experiencing the backcountry wilderness areas. The park preserves the fabric and tells the stories of the people and the land both before the park was established and as a result of the establishment of the park.

PROJECT BACKGROUND, PREVIOUS PLANNING, SCOPING, AND VALUE ANALYSIS

Project Background

Panorama, a concessionaire-owned building, originally functioned as a restaurant/gift shop/ concessionaire housing facility. During Franchise Fee negotiations in April 1998, the park concessionaire, ARAMARK Convention and Tourism Services, negotiated the transfer of the Panorama building to the NPS in lieu of Special Account contributions for 1995 and 1996. It was also agreed that ARAMARK could continue to operate the facility until the end of the contract (December 31, 2004). However, due to declining visitation and revenue losses in the food and beverage area, the concessionaire requested park approval to permanently close the dining room prior to the onset of the 2002 season. Only the retail portion of the building remains open through the 2004 operating season. In addition, the few old apartment units accessed directly from the building's exterior have not been used in approximately five years. The building is currently used as a gift shop and as law enforcement ranger offices (on the lower level).

The existing Panorama facility is currently owned and operated by ARAMARK. The NPS Northeast Regional Director signed an amendment to ARAMARK's contract on September 04, 2001, Amendment No. 2, Concessions Contract No. CC-SHEN001-85, ARAMARK Sports and Entertainment Services, transferring Panorama to the NPS. The NPS will take possession of the building on December 31, 2004. Section 12 (e) of this contract amendment states that:

> The Secretary [of the Interior] will perform an inspection of said structures and surrounding grounds. The Concessioner shall be responsible for any mitigation which may be recommended as part of a Level I contaminate survey or similar study. This inspection may include, but not be limited to, underground tanks, raw sewage run off, lead paint, asbestos, and other environmental contaminants.

Therefore, all hazardous materials would be properly removed from the Panorama building and disposed of in accordance with State and Federal regulations, in approved disposal facilities, prior to NPS possession of the building. Hazardous materials removal would occur regardless of which alternative is selected.

Previous Planning

The original scope of the Panorama rehabilitation project did not include the provision of a search and rescue/emergency medical service (SAR/EMS) vehicle and WFE storage space in the proposed building addition or permanent space for law enforcement ranger operations in the renovated building. The original scope of the project was stated as follows:

> This project will alter a former concession-owned building (Panorama) to change the function from a restaurant, gift shop, and concessioner housing to a year-round visitor/learning center. The alterations will include HAZMAT abatement, installation of

> an elevator and stairway addition to meet ADA compliance, the installation of new energy efficient windows, alterations to the interior to change function from restaurant/storage/housing, and repairs to the exterior of the building. Alterations will include demolition and upgrading of utilities in the existing restaurant/housing functions that are not sustainable and will not be needed in the new function.
>
> With the new function of this building, the upper floor will contain a visitor information/orientation desk with cooperating association sales area and backcountry permit registration station, interpretive exhibits, and an orientation area/lunch space for organized groups. The exhibits will include historic artifacts and address interpretive themes that are not covered in other park facilities. The lower floor will contain a multi-purpose educational/training room for public programs and staff training with table workspace and audio/visual capabilities, work preparation space for staff, and work and storage space for the cooperating association.

Law enforcement ranger office space in the Panorama facility was planned to be temporary space, used until such time that other facilities could be constructed as part of another project, the Piney River project. Due to changes in the original scope of the Piney River project and the results of Value Analyses conducted for the Panorama project, both of which are described below, space for these park functions were included as part of the proposed Panorama rehabilitation.

The Piney River Project

The original Piney River proposal involved the rehabilitation and expansion of existing facilities at the Piney River developed area, the Shenandoah National Park's North District operational area, located approximately 11 miles north of the Panorama facility. The proposal would rehabilitate the historic Technical Building and the historic Gas and Oil House to provide office and storage space for the ranger division. The proposed rehabilitation of the Technical Building included structural repairs (new foundation and framing), electrical improvements, new heating and cooling systems, roof replacement, new piping and plumbing fixtures, installation of fire detection and suppression systems, removal of asbestos materials and lead paint, and site grading improvements. This building would also be made fully accessible in compliance with the Americans with Disabilities Act (ADA). The proposed rehabilitation of the Gas and Oil House would consist of structural repairs (new foundation), roof replacement, lead paint removal, and site grading. All work would be conducted to minimize visible alterations to the interior and exterior of the historic buildings. Also originally proposed as part of this project was the expansion of the existing Maintenance Building and facilities. This expansion would provide three offices and one rally room for permanent and seasonal maintenance and resource management employees (the trail crew), two small shop areas for minor equipment repair, one small equipment storage space, ADA compliant restrooms and locker rooms, and material (salt, sand, etc.) storage buildings for roads and grounds operations. One emergency service vehicle bay and three storage spaces for SAR, EMS, and fire management equipment was also proposed for construction. Lastly, the project included upgrading the water lines, repairing the water supply reservoir, upgrading the sewer lines and septic systems, and restoring the disturbed landscape. Options for the historic Maintenance Shed would be pursued through consultations with the State Historic Preservation Officer (SHPO), since the Occupational Safety and Health

Association (OSHA) has condemned this building and its removal is being considered (Herzog, 2003a).

As a result of significant budget constraints at the park, the potential of competitive sourcing (evaluating Federal employees to determine if the private sector can perform the same work for less money), and the reorganization of the park's maintenance division from District operations to functional operations to reduce operational costs (decreasing four operational locations down to two), the park decided that operations at Piney River would become seasonal instead of year-round (NPS, 2003b). Seasonal operations at Piney River means that, during the off-season and winter, no water/wastewater facility operations, generators, fuel, or snowplowing are provided at the facility (Freeland, 2004). As a result of this decision, the scope of the Piney River project was reduced, and now includes rehabilitation of the two historic structures (Technical Building and Gas and Oil House) for seasonal office use (Herzog, 2003a).

Since Piney River is no longer being considered for year-round operations, the law enforcement ranger staff would need to be permanently located at Panorama. This required the park to reconsider the storage space needs and restroom layout of Panorama, as well as the storage/ staging location for the District's SAR/EMS vehicle, wildland fire engine (WFE), and associated emergency response equipment. The additional storage space was originally removed during the pre-design stage to bring the project within budget with the assumption that the law enforcement ranger operations would eventually move to Piney River, where adequate storage space would be provided. Currently, SAR/EMS vehicles and emergency response and firefighting equipment are stored at Piney River, while the WFE is temporarily being stored in the Headquarters Area of the park, although not in a storage bay (Freeland, 2004).

Similarly, the only non-public restroom on the lower level of Panorama, where Shenandoah National Park Association (SNPA) office/storage is located, is in the law enforcement ranger workspace. This workspace needs to be isolated from the other functions of the building due to the nature of law enforcement ranger work. Using the Choosing By Advantages process (see discussion below), the park determined that construction of the two vehicle storage bays at Panorama was the least costly and had the highest advantage rating (NPS, 2003b).

Scoping

Scoping is the effort to involve agencies and the general public in determining the scope of issues to be addressed in the environmental document. Among other tasks, scoping determines important issues and eliminates issues not important; allocates assignments among the interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies other permits, surveys, consultations, etc. required by other agencies; and creates a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping includes any interested agency, or any agency with jurisdiction by law or expertise (including the SHPO) to obtain early input.

To satisfy scoping requirements for this project, scoping letters were mailed out describing the project and requesting public and agency input on issues to be addressed in the EA. In addition, a public notice was published in the *Rappahannock News* on September 25, 2003, and in the *Page News and Courier* on October 2, 2003. The same notice was posted on the Shenandoah National Park's website (http://www.nps.gov/shen/). The public scoping period for the project ended on October 20, 2003. A total of 6 comments were received from the public on the project during this period. All of these comments focused on the details of the types of facilities and services the commentors would like to see at Panorama. Five of the 6 comments are very positive and supportive. None of the comments point out significant environmental issues that need to be addressed. All comments were considered during the planning of this project. The NPS also underwent consultations with several State and Federal agencies regarding the project. For a more detailed discussion of the scoping process, including agency consultation letters, refer to Appendix C.

Choosing By Advantages (CBA) and Value Analysis (VA) Processes

Choosing by Advantages (CBA)

Choosing by Advantages (CBA) is a decision-making system and process that allows evaluation of the alternatives' relative advantages (or benefits) and relative costs in accomplishing NPS functional goals and objectives. It was developed for use in the public agency decision-making environment. CBA focuses on the differences between alternatives, and determines how important are those advantages. The process establishes a single non-monetary scale that compares the importance or benefits of all the alternatives. In using the CBA process, the NPS asks itself "*what and how large are the advantages of each alternative*" proposed for consideration, "*how important are the advantages of the projects*," and finally "*are those advantages worth their associated cost*."

The completion of the typical CBA matrix is a process for having a group of decision-makers rank the non-monetary advantages of the alternatives being considered. The matrix is structured around evaluation factors (e.g., protect resources, provide for visitor enjoyment) that are driven by the functional goals and objectives of the decision and the agency. When combined with sound cost estimates (preferably life-cycle cost estimates), CBA structures decision-making to allow benefit or "importance of advantage" versus cost trade-offs to be made by the decision-makers, much like traditional money-based benefit-cost analysis. Value Analysis (VA or value-based decision-making) and CBA are inextricably combined in NPS decision-making. Value-based decision-making is a process guided by the seven steps of the VA Job Plan: Information Phase, Function Phase, Creativity Phase, Evaluation Phase, Development Phase, Recommendation Phase and Implementation Phase. VA focuses on creatively developing alternate ways of achieving functional objectives for a product, a facility, or a plan that either improve performance or reduce cost. CBA can be considered to be the evaluation process used in the Evaluation Phase of a VA, replacing the more traditional weighted factor analysis. In a broader sense, however, VA can be considered the Reconsideration Phase of CBA decision-making, where preferred alternatives are shaped and crafted. The application of VA methods allows a better understanding options and of how decision-makers value differences.

Value Analysis (VA)

VA Description

The value analysis (VA) is a process of arriving at an optimal solution to a complex issue through a structured and reasoned analysis of the factors and functions related to the issue.

VA Goal

The goal of VA is to provide a structured process that ensures that functional requirement are met, that all viable alternatives are considered, that the factors used to evaluate them are sound, that all alternatives are tested equally against these criteria, that solutions are cost effective on initial and life-cycle cost basis, that benefit to cost relationships were considered, that an independent second opinion was provided, and that the rationale for decisions is clearly documented. The overarching goal is that everyone can feel confident that the best solution, the best value was, in fact, achieved.

VA Process

The VA process involves the gathering of necessary background material, usually by the office requesting the VA; a VA workshop with an interdisciplinary team led by a facilitator; an oral presentation of the findings of the VA session upon its conclusion; and a written report of those findings. The composition of the VA team is tailored to meet project requirements, but is typically composed of people familiar with the project, as well as independent team members who bring perspective and insight to the study.

During the VA workshop, the essential functions being met by the project are studied, cost estimates are analyzed, and the entire range of alternative solutions are investigated. Factors are developed for evaluating the alternatives and alternatives are numerically rated, by team consensus, using those factors. The relative importance of the advantages of each alternative are weighed, and a ranking is developed showing how well each of the alternatives addresses the project needs, and recommendations are made by the study team.

Two VAs were conducted for this project, one on alternatives for the proposed new year-round visitor/education center, and one on alternatives for the additional SAR/EMS vehicle and WFE storage facility. Several alternatives were considered in each VA. Those alternatives not selected as the Preferred Alternative are described in detail in *Alternatives Considered but Dismissed*.

The VA for the visitor/education center focused on rehabilitating and reusing the existing concessionaire building (Panorama). However, after careful review and consideration, it became apparent to the project team that additional space would be needed to meet all of the functions required in the proposal. These functions included: 1) visitor orientation/information areas; 2) exhibits and sales of books by the SNPA; 3) CCC museum; 4) multipurpose room for an orientation film and school group use during inclement weather; 5) training room for public

programs and staff; and 6) office space for the educational and interpretative staff working at the facility. Using the Choosing By Advantages process, the VA concluded that the Preferred Alternative (rehabilitate Panorama and add an approximately 3,000-square-foot addition) provided greater service to the public and better resource protection, and was the most environmentally responsible, sustainable, and cost effective approach to meeting the needs of the public and park (NPS, 2002b).

Likewise, the VA for the additional SAR/EMS vehicle and WFE storage facility studied alternate locations for the facility. Using the Choosing By Advantages process, this VA concluded that the Preferred Alternative (construct the additional storage bay as part of the Panorama addition) had greater importance of advantages with less cost than any of the other alternatives (NPS, 2003c).

ISSUES AND IMPACT TOPICS

Issues can be defined as the relationship between the alternatives and the human environment. Issues are used to define which resources may experience either detrimental or beneficial consequences from an action; issues do not predict the degree or intensity of potential consequences that might result from an action. Issues and concerns affecting this proposal were identified from past NPS planning efforts and input from environmental groups, park staff members, and State and Federal agencies.

The major issues are the conformance of this proposal with the Shenandoah National Park 1983 General Management Plan (GMP) and NPS *Management Policies 2001*, as well as potential impacts to soils, cultural landscapes, visitor use and experience, and the socioeconomic environment (including park operations and human health and safety).

Impact topics are used to define and focus the discussion of the affected environment for each resource area, and the analysis of the potential environmental consequences of an action. These impact topics were identified based on Federal laws, regulations, and Executive Orders; NPS *Management Policies 2001*; and NPS knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Selected for Detailed Analysis

Resources were considered in accordance with NPS *Management Policies 2001*. The NPS manages resources of parks to maintain them in an unimpaired condition for future generations in accordance with the NPS-specific statutes, including the Organic Act of 1916 and the National Parks Omnibus Management Act of 1998; general environmental laws such as the Clean Air Act, the Clean Water Act, the Endangered Species Act of 1973, NEPA, and the Wilderness Act; Executive Orders; and applicable regulations.

NEPA is the basic national charter for protection of the environment. It requires Federal agencies to use all practicable means to restore and enhance the quality of the human

environment and to avoid or minimize any possible adverse effects of their actions upon the environment.

Resources include soils, wildlife, habitats, vegetation, cultural resources, and socioeconomic resources, among others. Additionally, NPS policy is to protect the natural abundance and diversity of all naturally occurring communities and organisms at the park.

The following issues and impact topics are analyzed in this EA:

Natural Resources

Soils

Construction activities, such as excavation, grading, trenching, and use of heavy equipment during construction would disturb soils, and potentially cause soil compaction and erosion at the project site. In addition, construction of the new addition to the Panorama facility would result covering some soil with an impermeable surface. Therefore, soils are addressed as an impact topic in this EA.

Visitor Use and Experience/Recreation

Providing for visitor enjoyment is one of the elemental purposes of the NPS according to the 1916 Organic Act. The Shenandoah National Park GMP reaffirmed the importance and significance of recreational values and established provisions for recreational uses by providing quality facilities for a more meaningful visitor experience. Both alternatives have the potential to affect visitor use and experience, as well as recreational values of Shenandoah National Park. In addition, two recreational facilities, the Appalachian Trail and Mary's Rock, are accessible from the Panorama facility parking area. Therefore, Visitor Use and Experience/Recreation is addressed as an impact topic in this EA.

Socioeconomic Environment

Park Operations

Park operations were considered in accordance with NPS *Management Policy 2001,* 9.0, *Park Facilities*, and the operational needs of the park. Shenandoah National Park operations include day-to-day operation and business and long-term management of resources. Both the No Action alternative and the Preferred Alternative have the potential to affect park operations. Therefore, Park Operations is addressed as an impact topic in this document.

Human Health and Safety

Health and safety was considered in accordance with NPS *Management Policies 2001*, Sections 8.2.5.1, *Visitor Safety*, and 8.2.5.2, *Emergency Preparedness and Emergency Operations*, which state that the saving of human life will take precedence over all other management actions as the NPS strives to protect human life and provide for injury-free visits under the constraints of the

1916 Organic Act. Both the No Action and Preferred alternatives have the potential to affect long- and short-term public health and safety. Actions detailed under both alternatives would variously affect EMS, SAR, and wildland fire management at the park. In addition, both alternatives would affect capabilities for fire suppression at the Panorama facility over the long-term. Therefore, Human Health and Safety is addressed as an impact topic in this EA.

Impact Topics Dismissed from Detailed Analysis

The following impact topics were dismissed from further analysis in this EA:

Natural Resources

Prime and Unique Farmland

In August 1980, CEQ directed that Federal agencies assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. The proposed project is exempt from the requirements of the Farmland Protection Policy Act because there are no prime farmlands associated with the project area, and there are no potential impacts that would directly affect wetland areas associated with agriculture. Therefore, this topic was dismissed from further consideration in this EA.

Water Resources

Water resources were considered in accordance with NPS *Management Policies 2001*, Section 4.6, *Water Resource Management*. Although there is an intermittent/ephemeral stream in close proximity to the Panorama facility, no construction would occur within the stream, and no equipment would need to enter the drainage. All impacts on water resources as a result of the Preferred Alternative would be localized, negligible to minor in intensity, and short-term in duration. While construction activities would involve the use of heavy equipment and would result in some soil disturbance and compaction, which could potentially adversely affect water resources within the project area, adverse impacts on water resources would be minimized with implementation of standard best management practices (BMPs) and strict adherence to the *Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations* (VESCL&R), *Virginia State Water Control Law*, and the *General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges of Storm Water from Construction Activities.* All regulated land-disturbing activities, including the Preferred Alternative, must comply with (at a minimum) the 19 VESCL&R Minimum Standards (4 Virginia Annotated Code (VAC) 50-30-40) that are applicable to this specific project, as well as the guidance provided in the *Virginia Erosion and Sediment Control Handbook* published by the Virginia Department of Conservation and Recreation (VDCR). As part of compliance with the VESCL&R, the NPS and construction contractor would develop, and submit to the VDCR for

approval, an erosion and sediment control (ESC) plan prior to the onset of construction activities, which would include plans for implementation of the above guidance (VDCR, 2001).

The U.S. Environmental Protection Agency (USEPA) has established permitting requirements for storm water discharges from construction activity under the National Pollutant Discharge Elimination System (NPDES) permit program. Within the Commonwealth of Virginia, VDEQ administers the Storm Water Management Program as part of the State's VPDES permit program and in accordance with the *Virginia State Water Control Law* and the *General VPDES Permit Regulation for Discharges of Storm Water from Construction Activities*. These statutes specifically set forth regulations regarding land development activities to prevent water pollution, stream channel erosion, and more frequent localized flooding. Under Phase 2 of these regulations, a permit is required for "small" construction activities, including clearing, grading, and excavating, that result in land disturbance of equal to or greater than one acre and less than five acres, or that result in the disturbance of less than one acre of total and area that is part of a larger common plan of development that will disturb equal to or greater than one and less than five acres (VDEQ, 2003). While the Preferred Alternative could result in the disturbance of less than one acre at any given location, when all proposed disturbance is taken together, greater than one, but less than five, acres would be disturbed. Therefore, construction activities associated with Alternative B are regulated under Phase 2 of the Federal and State Storm Water Regulations.

To comply with the Virginia Storm Water Regulations, the NPS and construction contractor would need to submit an application to the VDEQ for a VAR10-VPDES General Permit for Storm Water Discharges from Construction Sites. The main focus of this permit is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to reduce the pollutants in storm water discharges to the maximum extent practicable. The construction SWPPP is similar to an ESC plan, but also includes requirements for management of waste materials and activities at the construction site. To obtain general permit coverage, the NPS must file a Registration Statement with VDEQ at least two days prior to commencement of any land disturbing activities. Prior to submittal of this statement, the NPS and construction contractor would need to develop an SWPPP to be enforced at the construction site, which describes the practices and controls to be used to reduce pollutants in storm water discharges at the construction site, including erosion and sediment controls, stabilization practices, structural practices, storm water management, and other controls, and to ensure compliance with the terms and conditions of the permit. The required plan contents are outlined in detail in the *General VPDES Permit Regulation for Discharges of Storm Water from Construction Activities*. To ensure compliance with the SWPPP, the regulations require that facility personnel familiar with the construction activity, the BMPs, and the SWPPP inspect all disturbed areas that have not been finally stabilized at least once every 14 calendar days and within 48 hours of the end of a storm event that is 0.5 inches or greater (VDEQ, 2003).

No appreciable long-term impacts on water resources are anticipated under any of the alternatives. No impact on the park's freshwater supply would be anticipated from the installation of a larger water line, and the existing water storage tank in the vicinity of the project site is sufficient for future needs.

Year-round operation of the Panorama facility under the Preferred Alternative would change the amount and timing of effluent discharged from the Thorton Gap Wastewater Treatment facility, as discussed in detail under *Waste Management* below. Effluent from the treatment facility is discharged into the headwaters of Thorton River. Under the current State VPDES permit for the operation of the facility, the facility is permitted to discharge a maximum of 0.035 million gallons a day (mgd; or, 35,000 gallons per day (gpd)) of effluent into Thorton River. Since the predicted maximum daily wastewater flow from the facility under the Preferred Alternative would be 11,526 gpd (see *Waste Management* below), implementation of the Preferred Alternative would not exceed the maximum allowable discharge required by the State. However, a proposed operational revision to the existing VPDES permit would need to be submitted to the State for approval due to the change in operation from seasonal to year-round. All effluent discharged from the Thornton Gap Wastewater Treatment facility is, and would continue to be, required to comply with the following water quality parameters established by the State to prevent adverse impacts on water resources and aquatic species:

Parameter	Monthly Average	Maximum
BOD5	24 mg/L	36mg/L
TSS	24 mg/L	36mg/L
Ammonia-N	15 mg/L	15mg/L
Effluent Chlorine (TRC)	0.026mg/L	0.032mg/L
Fecal coliform	200 N/100 mL	N/A
E. coli	200 N/100 mL	N/A

Parameter	Minimum	Maximum
pH	6.0 S.U.	9.0 S.U.
Dissolved Oxygen	6.5mg/L	N/A
Contact Chlorine (TRC)	1.0 mg/L	N/A

In sum, erosion, sediment, and other pollutants would be controlled during all phases of construction in accordance with State of Virginia and Federal regulations. Any adverse impacts on surface water resources would be short-term, localized, and negligible to minor in intensity. Therefore, Water Resources was eliminated as an impact topic in this document.

Wetlands and Floodplains

Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) require an examination of impacts to floodplains and wetlands, of potential risk involved in placing facilities within floodplains, and protecting wetlands. The NPS *Management Policies 2001*, Sections 4.6.4, *Floodplains*, and 4.6.5, *Wetlands*, the 1993 NPS Floodplain Management Guidelines, DO-77-1 (Wetland Protection), and the 1983 GMP provide guidelines on developments proposed in floodplains and wetlands. No wetlands have been identified by park natural resource staff within the project area, and no wetlands would be affected by project implementation. The proposed project is located within a 500-year floodplain (FEMA, 2003); however, the chance of a flood occurring in the project area in any given year is zero percent. Both alternatives would avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and would avoid direct or indirect support of

floodplain development. Therefore, floodplains and wetlands were dismissed as impact topics in this document.

Trout Streams

According to the Virginia Department of Game and Inland Fisheries, there are three streams/rivers within the vicinity of the project area that have been designated as Class II trout streams (see letter of coordination in Appendix C). These include Pass Run (07PSS-02), Hazel River (08HAZ-01), and Thornton River (08THP-01). Since the Hazel and Thornton rivers are located in different drainages than the Preferred Alternative, there would be no potential to impact these rivers. Pass Run is located within the same watershed as the Preferred Alternative. However, the project area is located nearer to the headwaters of the drainage, where Pass Run has intermittent flow and no trout. In addition, there is a buffer and a trail located between Panorama and Pass Run that would likely deflect the majority of runoff from the project site (Spitzer, 2003). As a result, no impacts to trout streams would be anticipated from any of the alternatives. Therefore, Trout Streams was dismissed as an impact topic in this EA.

Vegetation and Wildlife

NEPA requires Federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid or minimize all possible adverse effects of their actions upon the environment. NPS policy is to protect the components and processes of naturally occurring biotic communities, including the natural abundance, diversity, and ecological integrity of plants and animals (NPS, 2000c).

Construction activities would have only short-term, negligible to minor, localized, adverse impacts on vegetation and wildlife. The proposed installation of a larger water line leading to the Panorama facility would require clearing of an additional 10 feet of right-of-way corridor width for construction, up to a maximum width of 20 feet over the 3,000 linear-foot length of corridor, equating to the removal of approximately 30,000 square feet (about 0.7 acres) of vegetation. Almost all vegetation associated with the project is introduced exotic species and/or second growth native species. All areas of disturbance would be revegetated with a native species mixture upon completion of construction activities. Over the long-term, the maintained width would be a minimum of 12 feet to a maximum of 20 feet. This maintained corridor would be of early successional/grassy vegetation. The removal of a small amount of second growth and understory vegetation would result in a negligible to minor loss in the amount of wildlife habitat along the water line corridor. However, the many acres of suitable wildlife habitat available surrounding the project site would remain unaffected by construction activities.

Implementation of the Preferred Alternative is not anticipated to result in any new introductions of invasive species into the park. The NPS would require the construction contractor to powerwash all construction vehicles and equipment prior to their initial arrival at the park to remove seed and plant material in an effort to avoid the introduction of any invasive exotic vegetation.

A small stand of eastern hemlock is located east of the upper parking lot at the Panorama facility. While not a rare community in Virginia, eastern hemlocks are being devastated by the hemlock woolly adelgid, a small, non-native insect that feeds of the sap of the trees. Hemlocks are dying rapidly in the park, and therefore, the NPS is very sensitive to activities occurring around hemlock stands. Construction activities under the Preferred Alternative would be conducted outside the footprint of this hemlock stand and no disturbance to this stand would be permitted. The NPS would monitor the stand to ensure construction activities would not have an adverse impact on the hemlock stand.

Loss of wildlife would be proportional to the amount of habitat lost. The Panorama building site and utility corridor have been previously affected through years of close association with maintenance vehicles and attendant human activity; any wildlife in the area have unquestionably been long habituated to human activity, noise, and traffic, or departed entirely. Larger wildlife would probably avoid the construction zone to a certain extent during construction. During construction some small animals, such as rodents, may be killed or forced to relocate to areas outside the construction zone. Overall, populations of affected species might be slightly and temporarily lowered during construction, but no permanent negative effects on wildlife would be anticipated.

There would be potential localized, negligible to minor, adverse impacts to wildlife in the short-term as a result of construction activities associated with the water main replacement. Over the long-term, upon completion of construction and reclamation/revegetation, wildlife usage in the area would return to pre-project conditions and the adverse impacts would not be measurable.

Overall, only short-term, negligible to minor, localized, adverse impacts on biotic communities are anticipated to result from the project. No long-term impacts on vegetation and wildlife are anticipated to occur. Therefore, Vegetation and Wildlife was dismissed as an impact topic in this EA.

Species of Special Concern (Threatened, Endangered, Candidate, and Rare Species)

The Endangered Species Act (1973), as amended, requires an examination of impacts on all federally listed threatened or endangered species. NPS policy also requires examination of the impacts on Federal candidate species, as well as State-listed threatened, endangered, candidate, rare, declining, and sensitive species. The NPS initiated informal consultation with the U.S. Fish and Wildlife Service (USFWS) in a letter dated September 10, 2003 (see **Figure C-3** in Appendix C) regarding the presence of federally listed or candidate species or critical habitat within or near the project area, and the potential for such species or habitat to be impacted by the project.

The USFWS responded by providing updated species lists of federally threatened, endangered, and proposed species that may be present on or in the vicinity of Shenandoah National Park (Page and Rappahannock counties). Updated lists were received on October 6, 2003, and are provided in **Figure C-4** in Appendix C). In addition, the USFWS recommended the NPS consult with the two State agencies responsible for coordinating species lists on behalf of USFWS. At the request of the USFWS, the NPS consulted with the Virginia Department of Conservation and

Recreation, Division of Natural Heritage, and the Virginia Department of Game and Inland Fisheries (see **Figures C-5** and **C-7**).

In a letter dated October 10, 2003, the Virginia Department of Conservation and Recreation's Division of Natural Heritage stated that, while there are natural heritage resources known to occur within the project area, none would be adversely impacted by the project due to the scope of the activity and the distance to the resources (see **Figure C-6**). The letter also stated that the Preferred Alternative would not affect any documented State-listed plants or insects, and that no State Natural Area Preserves under the Department's jurisdiction are located in the project area. In addition, there are no long-term ecological monitoring sites (current or proposed) or rare plant populations within the proposed area of disturbance (Olson, 2003a).

In a letter dated November 5, 2003 (see **Figure C-8**), the Virginia Department of Game and Inland Fisheries responded that one federally listed species, the Shenandoah salamander (*Plethodon shenandoah*), has been documented in the vicinity of the project area, and that one State special concern species, the winter wren (*Troglodytes troglodytes*) has been documented in the area. According to Shenandoah National Park records, the nearest Shenandoah salamander habitat and associated individuals to the proposed project site are located approximately 2 miles south of the Panorama facility. These individuals are known as the "Pinnacle Locality." The northernmost of the two occurrences is located approximately 200 meters southwest of Byrds Nest # 3. The primary Pinnacle population is located 300 to 400 meters west-southwest of the above-mentioned occurrence, and is approximately between Byrds Nest # 3 and Jewell Hollow Overlook (Olson, 2003a). Given the distance between these nearest populations and the project site, neither the Shenandoah salamander nor its habitat would be affected by the project. The winter wren does not have a legal designation, and as such, is not afforded special protection and does not require additional coordination.

In sum, there are no federally or State-listed plant or animal species or critical habitat that would be affected by the project. To further ensure no impact on listed species, the NPS would require the project area to be surveyed by an NPS biologist prior to the onset of construction. In addition, the NPS would provide construction workers with a photograph of the Shenandoah salamander and would instruct workers to stop all work if a Shenandoah salamander is encountered at the site, and notify the NPS immediately. Therefore, Species of Special Concern (threatened, endangered, candidate, and rare species) was dismissed as an impact topic in this EA.

Air Quality

Section 118 of the 1963 Clean Air Act (CAA) requires the park to meet all Federal, State, and local air pollution standards. Section 176(c) of the 1963 CAA requires all Federal activities and projects to conform to state air quality implementation plans to attain and maintain national ambient air quality standards. NPS *Management Policies 2001* addresses the need to analyze potential impacts to air quality during park planning.

Shenandoah National Park is classified as a Class I air quality area under the CAA, as amended. The CAA also states that the Federal land manager has an affirmative responsibility to protect

the park's air quality-related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health) from adverse air pollution impacts.

Should the Preferred Alternative be selected, local air quality would be temporarily affected by dust and vehicle emissions during construction. Hauling material and operating equipment during the construction period would result in increased vehicle exhaust and emissions. Hydrocarbons and NO_x, and SO_2 emissions would be rapidly dissipated by air drainage since air stagnation is rare at the project site. To reduce construction equipment emissions, the park would require that construction workers apply appropriate mitigating measures limiting idling of construction vehicles. Fugitive dust plumes from construction equipment moving over dirt or from soil disturbance would intermittently increase airborne particulates in the area near the project site, but loading rates are not expected to be considerable. To partially mitigate these effects, such activity would be coupled with water sprinkling to reduce dust.

Year-round operation of the proposed new visitor/education center would generate additional traffic and associated vehicle emissions over the long-term. However, this increase in vehicle traffic beyond current levels is not anticipated to be appreciable, and the additional amount of carbon dioxide generated from increased traffic is anticipated to be negligible.

Overall, there would be a slight short-term degradation of local air quality due to dust generated from construction activities and emissions from construction equipment. These effects would last only as long as construction occurred and would be negligible and localized. Long-term impacts on air quality are not anticipated to exceed negligible levels. The park's Class I air quality would not be affected by the proposal. Therefore, Air Quality was dismissed as an impact topic in this document.

Cultural Resources

The National Historic Preservation Act (NHPA; 16 USC 470 *et seq*.), NEPA, NPS 1916 Organic Act, NPS *Management Policies 2001* (NPS, 2000c), DO–12 (*Conservation Planning, Environmental Impact Analysis and Decision-making*), and NPS–28 (*Cultural Resources Management Guideline*) require the consideration of impacts on any cultural resources that might be affected, and NHPA, in particular, on cultural resources either listed in, or eligible to be listed in, the National Register of Historic Places (NRHP). Cultural resources include archeological resources, cultural landscapes, historic structures and districts, ethnographic resources, and museum objects, collections, and archives.

Archaeological Resources

Archaeological resources are the remains of past human activity and records documenting the scientific analysis of the remains (NPS, 1998). There would be no potential to affect archaeological resources at the Panorama facility itself, due to the already disturbed nature of the site (NPS, 1997d). Archaeological testing was conducted along the proposed water line corridor north and east of the Panorama Entrance Station. During this testing, a total of 145 shovel test pits were excavated along 8 transects. Three lithic flakes, 3 historic ceramic sherds, and a small quantity of modern or non-diagnostic historic artifacts were recovered. The survey did not result

in the discovery of any NRHP-eligible archaeological resources within the tested water line corridor, and no effects on archaeological resources would occur as a result of the Preferred Alternative. No additional archeological testing or excavation is recommended (Levin, 2003a; NPS, 2003d). A report documenting the results of the archaeological survey was submitted to the Virginia SHPO, and consultation and comment on the proposal were solicited from the SHPO. In a response letter dated March 3, 2004, the SHPO concurred with the finding of No Adverse Effect on archeological resources was determined, and that no further archaeological investigations are warranted in connection with the project as presently designed (see **Figure C-10** in Appendix C). Therefore, Archaeological Resources was dismissed as an impact topic in this EA.

Cultural Landscapes

The entire length of Skyline Drive is listed on the NRHP as a cultural landscape, as being nationally significant for its relation to broad social movements (the Civilian Conservation Corps (CCC), Work Progress Administration, Great Depression, etc), for its historic architecture, and landscape. The Panorama facility is not contributory to the cultural landscape of Skyline Drive (Engle, 2003a), since it long post-dates the period of significance for the Drive (1931 to 1952) (NPS, 1997c). Therefore, rehabilitation of this building and construction of a new building addition onto this building would not affect any cultural landscapes. However, the area of the water line corridor does contribute to the cultural landscape of Skyline Drive (Engle, 2003a). The existing non-historic water line corridor was constructed in the 1960s, and has been visible from Skyline Drive since its construction. It is approximately 10 to 12 feet wide, but is not dominant in the landscape and is not currently regularly maintained to the standard 20-foot width required for utility corridors (Herzog, 2004). The proposed installation of a larger water line leading to the Panorama facility would require clearing of an additional approximately 10 feet of right-of-way corridor width for construction, up to a maximum width of 20 feet. This additional clearing would initially be more apparent in the landscape than the existing corridor, since the entire length of the corridor would be opened to 20 feet, resulting in a more defined line in the landscape. However, this impact would still be minor, since it would not diminish the overall integrity of Skyline Drive's cultural landscape. The impact would be localized, with the views from Skyline Drive and U.S. 211, the Panorama parking area, and from higher elevations (looking in the direction of the corridor) being primarily affected.

Over the long-term, the maintained corridor width would be a minimum of 12 feet to a maximum of 20 feet, depending on location. The section of the corridor from U.S. 211 to the administrative road would be maintained at 12 feet to reduce impacts on Skyline Drive's cultural landscape, helping to preserve the integrity of the landscape. Where the corridor crosses Skyline Drive, vegetation would be allowed to grow in the corridor to reduce adverse impacts on the cultural landscape. This would reduce long-term visual quality impacts associated with the corridor, and associated adverse effects on the cultural landscape of Skyline Drive, to a negligible level. Since the water line corridor is currently somewhat visible from Skyline Drive, impacts on the cultural landscape over the long-term from the Preferred Alternative would not deviate much from existing conditions. Because the impacts to the Skyline Drive Cultural Landscape would be negligible to minor, adverse, but short-term, Cultural Landscapes was dismissed as an impact topic in this document.

Historic Structures

The existing Panorama facility and parking areas were constructed in the 1960s and are not eligible for inclusion into the NRHP because the Panorama facility is not 50 years old, does not fall within a special exception category (such as Mission 66) in which some historic structures younger than 50 years old may be eligible for the NRHP, and the facility postdates the period of significance for the Skyline Drive Historic District (1931-1952). The facility was neither designed nor built by the NPS; it was, and still is, a private concession building (Engle, 2004a).

The NPS underwent consultation with the Virginia SHPO regarding the Panorama facility when the existing parking area at the facility was repaved during a Federal Highways Administration project in 1998. The Virginia SHPO concurred that there would be no impacts on known or unknown cultural resources at the site with a "No Effect" finding (see **Figure C-9** in Appendix C of this EA) and that the building does not have architectural merit (Engle, 2004a). In addition, there are no historic structures along the proposed water line corridor (Engle, 2003a; 2003b). Therefore, Historic Structures was dismissed as an impact topic in this EA.

Ethnographic Resources

According to NPS–28, *Cultural Resource Management Guideline*, an ethnographic resource is any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (NPS, 1998, p.181). There are no ethnographic resources or traditionally associated tribes within the project area. Archaeological surveys conducted within the area over the past 50 years have not uncovered any permanent Native American settlements, although hunter/gatherer parties used the area (Engle, 2003b). In addition, it is very unlikely that permanent Native American settlements occurred in the area due to its high altitude/mountainous terrain; only temporary hunting and gathering encampments are known from the site. Therefore, Ethnographic Resources was dismissed as an impact topic in this EA.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by DOI agencies be explicitly addressed in environmental documents. The Federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United Sates to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of Federal law with respect to American Indian tribes and Alaska Native entities. There are no Indian trust resources in, near, or associated with the project area. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, Indian Trust Resources was dismissed as an impact topic in this EA.

Museum Objects, Collections, and Archives

Museum objects are material things possessing functional, aesthetic, cultural, symbolic, and/or scientific value, and include prehistoric and historic objects, artifacts, art, archival documents, and natural history specimens that are part of the museum collections (NPS, 1998). No museum collections are currently stored at the Panorama facility, and none have the potential to be impacted during construction at the facility. After rehabilitation of the Panorama facility is completed, relevant museum objects would be moved from storage in the park Headquarters Area to the Harpers Ferry Conservation Center for the fabrication of exhibits. While there is a very small risk that these museum objects could be damaged or otherwise adversely affected during transport, the risk is negligible because the packing of certain museum artifacts in the park's collections to be moved from storage at the park headquarters to exhibit in the rehabilitated Panorama Visitor/Education Center would be done very professionally, and thus, adequately to protect the artifacts in transit. All exhibited objects would be shown in museum cases approved by the Harpers Ferry Conservation Center. In addition, the CCC museum within the rehabilitated Panorama facility would meet all NPS museum management standards, including the installation of alarm and sprinkler systems and temperature controls (Van Horn, 2003; Engle, 2003b). Although museum objects would be exhibited within the rehabilitated Panorama facility, none would be stored there. All museum objects would continue to be stored at the park's museum storage area at Headquarters, which is a state-of-the-art storage facility (Engle, 2003b; 2003c). There would be no long-term impacts on museum objects as a result of the project. Therefore, Museum Objects, Collections, And Archives was dismissed as an impact topic in this EA.

Socioeconomic Environment

Economy and Social Conditions

Regardless of which alternative is selected, ARAMARK's concession operations at Panorama will cease when the NPS takes possession of the building on December 31, 2004, as described under *Project Background* above. The gift shop currently operating at Panorama will be closed, resulting in the loss of one or two seasonal jobs. Under the No Action alternative, the NPS law enforcement rangers operations would continue to work out of Panorama, and no other uses of the building would occur. The No Action alternative would have no impact on the local economy. However, there may be an adverse social impact associated with closing the Panorama building to visitors, with no intent to reopen it as a visitor facility. This would likely be a long-term, minor, localized, adverse impact on social conditions.

Construction activities associated with rehabilitation and expansion of Panorama and replacement of the underground water line under the Preferred Alternative would have short-term, negligible impacts on the local economy due to short-term increases in employment opportunities and revenues for local businesses and government. A private construction contractor would be hired by the NPS to conduct all construction activities. Construction-related benefits to the local economy through wages, overhead expenses, material costs, and profits would last only the duration of construction, and would be minimal.

Over the long-term, minor, beneficial impacts on the local economy would occur under the Preferred Alternative as a result of increased visitation during winter months. As discussed in more detail below under the impacts on visitor use and experience under the Preferred Alternative, the NPS anticipates that approximately 300,000 visitors would visit the new Panorama Visitor/Education Center annually. It is not possible at this time to determine how many of these visitors would be "new" visitors and how many would be repeat visitors from other park visitor centers and facilities. However, the NPS anticipates that approximately 50,000 visitors would visit the new Panorama Visitor/Education Center during winter months. These visitors would be "new" visitors, since there are no other facilities open at the park during winter months. These "new" visitors would have a long-term, beneficial effect on the local economy through use of public services and spending at local restaurants and shops. Since no other park visitor facilities are open during winter months, visitor expenditures during winter months would be additional inputs into the local economy. However, this impact would likely be minor in intensity due to the small amount of visitors anticipated during winter months compared to typical annual visitation totals, the fact that some of these visitors would be school groups that would not expend any money in the local economy, and the fact that visitors would not be likely to stay overnight in the area due to the lack of visitor facilities available. Only minor economic impacts are anticipated under the alternatives. Therefore, Economy and Social Conditions was dismissed as an impact topic in this EA.

Noise/Soundscapes

In accordance with NPS *Management Policies 2001* (NPS, 2000c) and DO–47, *Sound Preservation and Noise Management*, an important part of the NPS mission is preservation of natural soundscapes associated with National Park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. The frequencies, magnitudes, and duration of human-caused sound considered acceptable varies among NPS units, as well as throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

Noise levels and natural soundscapes would be affected by the Preferred Alternative; however, the effects would be short-term, localized, and minor in intensity. Under the Preferred Alternative, most construction work would occur during the daylight hours, potentially extending into the evening hours only if extraordinary work issues arise. Noise generated from the use of equipment during construction would temporarily disturb wildlife adjacent to the construction sites, and could cause the short-term displacement of some species. Construction noise would also affect nearby recreation users, such as users of the Appalachian Trail. Construction noise would be mitigated through the use of state-of-the-art noise reduction technology on construction equipment to the maximum extent possible to minimize the amount of noise from construction activities and by maintaining daylight work hours. In addition, the land surrounding the project site is primarily forested, and this land cover would serve to attenuate any construction sounds produced.

The transport of equipment and other materials to and from the project site would require the use of large trucks, which would generate noise, and would not be restricted to the area adjacent to

construction. Additional vehicular traffic to the Panorama facility over the long-term as a result of year-round operations would also produce some minor noise. However, all of these noise sources would be transient, and would use existing roads to access the project site, which already experience similar vehicular noise impacts.

Short-term effects on noise levels and natural soundscapes associated with the Preferred Alternative would be localized and minor in intensity. Long-term impacts on noise levels associated with increased visitor vehicular traffic would not be restricted to the immediate project area, but would be negligible in intensity. Therefore, Noise/Soundscapes was dismissed as an impact topic in this EA.

Visual Resources and Night Skies

Short-term, negligible to minor, adverse effects on visual quality may result from construction activities due to the presence of workers, equipment, and materials in the project areas and ground disturbance associated with construction. Due to the forested nature of the surrounding landscape, the primary viewers in the area would be passersby on U.S. 211 and Skyline Drive in the immediate vicinity of the project site, as well as visitors accessing the Appalachian Trail or Mary's Rock through the Panorama parking area. All areas disturbed during construction on the Panorama facility would be seeded with a native seed mixture and allowed to revegetate. Revegetation of these areas would alleviate much of the adverse visual quality impacts associated with the disturbance of these areas over the long-term, but the area could remain impacted until the revegetated areas have matured to pre-disturbance conditions.

Under the Preferred Alternative, most work would occur during the daylight hours, potentially extending into the evening hours only if extraordinary work issues arise. Any lighting, such as security lighting, would be directional and shielded to prevent intrusions into the night sky. No impacts on the night sky are anticipated to result from the project.

No appreciable long-term impacts on visual quality are anticipated to result from the proposed changes to the Panorama facility. Since the Panorama facility is an existing facility, scenic values have already been disturbed in this area and the proposed changes to the building would not additionally or adversely impact the visual quality of the area.

The proposed installation of a larger water line leading to the Panorama facility would require clearing of an additional 10 feet of right-of-way corridor width for construction, up to a maximum width of 20 feet. Over the long-term, the maintained width would be a minimum of 12 feet to a maximum of 20 feet. The section from Route 211 to the administrative road would be maintained at 12 feet to reduce visual impacts from Skyline Drive. Where the corridor crosses Skyline Drive, vegetation would be allowed to grow in the corridor to hide the corridor from view from the Drive. This would reduce long-term, adverse visual quality impacts associated with the corridor.

Overall, only negligible to minor, adverse effects on visual quality may result from the project. Therefore, Visual Resources and Night Skies were dismissed as impact topics in this EA.

Waste Management

Storage and ultimate disposal of all construction wastes, including solid, sanitary, landscape/ vegetative, and hazardous wastes, would be the responsibility of the construction contractor. All such material would be temporarily stored and disposed of in accordance with State and Federal laws and regulations and NPS policies, in approved disposal facilities (NPS, 1997b). In accordance with NPS construction contract specifications, the contractor would provide and maintain temporary sanitary waste facilities in accordance with Virginia Health Department and NPS requirements (NPS, 2000b). All vehicles used for transport of solid waste would be operated and maintained in accordance with Virginia Solid Waste Management Act (Title 10.1, Chapter 14 of the Code of Virginia) and its implementing regulations. The generation, containment, and disposal of wastes during construction would have a short-term and negligible, at most, impact on waste management. Existing disposal facilities would provide sufficient capacity to accommodate these wastes.

Over the long-term, solid wastes from operation of the facility would continue to be disposed of in accordance with State and Federal laws and regulations and NPS policies, in approved disposal facilities. A smaller amount of solid waste is anticipated to be generated from operations of the renovated Panorama facility than was formerly generated by the facility due to changes in building uses from restaurant/gift shop/office space to visitor center/office space functions, which generate less solid waste.

The Thorton Gap Wastewater Treatment facility, which treats wastewater from the Panorama facility, is currently open only seasonally with the existing Panorama facility, and is licensed to treat up to 15,000 gallons of wastewater per day (Herzog, 2003a). The wastewater treatment facility currently treats approximately 2,700 gallons per day from the existing Panorama facility (Herzog, 2003b). However, this amount is much less than formerly treated from the Panorama facility, when the restaurant was open. When the restaurant at Panorama was operational, a much larger volume of wastewater was generated daily and treated at the Thorton Gap Wastewater Treatment facility (Reeser, 2003).

Under the Preferred Alternative, operations at this facility would change to year-round. Assuming the new Panorama Visitor/Education Center receives 300,000 visitors annually, average daily water use would be around 850 people per day. A peak water use (observed from similar visitor facilities) would be approximately 250 percent, which would indicate a peak visitor use of 2,125 visitors per day (266 people per hour for 8 hours) to the site. Therefore, the following maximum wastewater flow would be anticipated from the Panorama facility under the Preferred Alternative over the long-term:

(2,125 persons per day) x (5.3 gallons per day (gpd)/person (USEPA Guidelines)) = 11,263 gpd
(25 staff) x (14.5 gpd/staff (USEPA Guidelines)) = 263 gpd
Total flow = 11, 263 gpd (visitors) + 263 gpd (staff) = **11,526 gpd**

Therefore, predicted maximum daily wastewater flow would be less than the operational capacity of the Thorton Gap Wastewater Treatment facility (Reeser, 2003). Since the wastewater treatment facility does not serve any other facilities in the area (Herzog, 2003b), the

new Panorama facility would not exceed the capacity of the existing wastewater infrastructure. Therefore, Waste Management was dismissed as an impact topic in this EA.

Land Use

None of the alternatives would change the land uses within the project area from their existing uses. The project area would continue to be managed by the NPS under current management policies. The area of the Panorama facility is currently designated as a "development zone" within the GMP (NPS, 1983). Although the uses of the Panorama facility would change as a result of the Preferred Alternative, this change in building use would not alter the internal (NPS) designation of "development zone." In addition, the building would still be used for visitor services, as it is currently. Therefore, Land Use was dismissed as an impact topic in this EA.

Transportation

Construction activities under the Preferred Alternative, as well as the transport of equipment and workers, would increase traffic volumes and congestion along U.S. 211 over the short-term, potentially resulting in some increased traffic delays, a slight increase in the risk of vehicular accidents, and potential damage to affected roads. However, these impacts would be short-term and negligible to minor in intensity. All required signage per the *Manual on Uniform Traffic Control Devices 2000* (USDOT, 2001) would be installed and maintained around the construction area. Construction vehicles would largely be restricted from using Skyline Drive to access the construction site. In addition, while installation of the new water main would require two highway crossings, impacts on the highway surface would be avoided through boring and jacking (NPS, 2003a).

Staff parking would be from U.S. 211, the lower level (western) parking area for 25 vehicles, with 2 handicap accessible parking spaces. Visitor parking would be from Skyline Drive, the upper level (eastern) parking area, which has parking for 59 vehicles, handicap accessible parking, and bus parking for 6 vehicles (see **Figure 1b**). No alterations or additions are proposed for parking areas, and other changes would be made to the site (NPS, 2003a).

Over the long-term, there would be an increase in visitor traffic on U.S. 211 and Skyline Drive in the project area due to the changes in building function to a year-round visitor/education center and fully functional NPS operations facility. U.S. 211 and Skyline Drive already receive heavy use, and although this increase in traffic may somewhat increase congestion or result in slight delays along these roadways, the increase in traffic is not anticipated to have more than a minor impact on transportation in the area. Although Skyline Drive is often closed during inclement winter weather, the new visitor/education center at Panorama would still be able to be accessed from U.S. 211. Only minor impacts on transportation are anticipated from this project. Therefore, Transportation was dismissed as an impact topic in this EA.

Environmental Justice/Protection of Children

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires Federal agencies to identify and address any

disproportionate adverse human health or environmental effects of its projects on minority or low-income populations. Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs Federal agencies to "identify and assess environmental health risks and safety risks that may disproportionately affect children."

Since the proposed project would take place on lands administered by the NPS, there would be no displacement or relocation of residents or elimination of jobs. There are no private residences in the immediate vicinity of the project area, and none would be affected by implementation of the project. There would be no activities occurring under any alternative that would disproportionately and adversely affect minority or low-income populations (as defined in the USEPA's Draft Environmental Justice Guidance (July 1996)) or children. Any short-term, adverse effects on human health and safety that would result from construction activities would have the potential to affect all park visitors and employees, regardless of race, age, or income level. Likewise, the beneficial human health and safety impacts that would result from the Preferred Alternative would be experienced by all park visitors and employees, regardless of race, age, or income level. Therefore, Environmental Justice/Protection of Children was dismissed as an impact topic in this EA.

ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes two management alternatives for the proposed rehabilitation of the Panorama facility as a visitor/education center. These management alternatives were developed by the interdisciplinary team to meet the purpose and need for the project.

The No Action alternative describes the action of continuing the present management operation and condition. It does not imply or direct discontinuing the present action or removing existing uses, developments, or facilities. The No Action alternative provides a basis for comparing the management direction and environmental consequences of the preferred alternative. Should the No Action alternative be selected, the NPS would respond to future needs and conditions of the park without major actions or changes in the present course.

The Preferred Alternative presents the NPS proposed action and defines the rationale for the action in terms of resource protection and management, visitor and operational use, costs, and other applicable factors.

This section also identifies the environmentally preferred alternative, lists mitigation measures to be implemented as part of the Preferred Alternative, describes the range of alternatives considered for the project, and compares the alternatives assessed in the EA and their potential environmental impacts.

ALTERNATIVE A: NO ACTION

Under Alternative A (No Action), the Panorama facility would not be rehabilitated or remodeled as a visitor/education center, and the water transmission pipeline leading to the facility would not be replaced. The existing infrastructure would remain in place, and would continue to be in non-compliance with the ADA, Life Safety Code® (NFPA 101®), and other regulations to protect safety and property. There are no improvements to Panorama's infrastructure scheduled for the foreseeable future.

The Park would still take possession of the Panorama facility from ARAMARK on December 31, 2004. While the facility would no longer be used as a gift shop once ARAMARK vacates, staff office space would still be provided in the facility. The NPS law enforcement ranger staff would continue to work out of their current office space within the building, and the remainder of the building would be closed to the public. SAR/EMS vehicles and firefighting and emergency response equipment would continue to be stored at Piney River and the WFE would continue to be stored in the Headquarters Area, which would continue to result in higher response times of personnel to emergency situations and inefficient park operations.

No new exhibit space would be provided in the Panorama building to display on special exhibit certain artifacts in the park's museum collections, such as those relating to the CCC, whose role in developing the park is a largely untold story. Under the No Action alternative, no new special exhibit space would be provided in the park, and artifacts relating to untold stories, like that of the CCC, would remain in storage in their current location in the building that houses museum collections and archives in the park Headquarters Area on U.S. Route 211 to the southwest of the Panorama building towards Luray, Virginia.

ALTERNATIVE B: PREFERRED ALTERNATIVE

The NPS proposes to rehabilitate and remodel the existing 12,444-square-foot building and add a 2,820-square-foot 2-story building addition to the Panorama facility located at Thornton Gap, Panorama Point, at the intersection of U.S. 211 and Skyline Drive in Shenandoah National Park, Page and Rappahannock counties, Virginia. The proposed building changes would convert the existing concession-owned restaurant/gift shop/law enforcement staff offices into a year-round visitor/education center and work space for multiple work groups (visitor education, interpretation, law enforcement, fee collection, and backcountry/wilderness coordinator) and the Shenandoah National Park Association (SNPA) (sales, storage, and office space). As part of the proposed building addition, a vehicle storage structure for an SAR/EMS vehicle and a WFE would be constructed.

Table 1 provides a breakdown of the interior space allocations proposed for the rehabilitated and expanded Panorama building. **Figure 3** shows the general proposed Panorama site plan.

Table 1. Interior Space Allocations for the Proposed New Panorama Facility		
Type of Use	**Approx. Total Size (sq. ft.)**	**Rooms and Activities Included**
Visitor Services/ Educational and Interpretive Program	3,850	Foyer; lobby/exhibit area (including information and orientation desk, backcountry permit station, displays, discovery station, and topographic relief map); CCC museum; multi-purpose room (includes meeting and presentation space for 60 people)
NPS Office, Work, and Storage Space	3,450	Offices for Visitor Center Supervisor, Education Program Manager, Backcountry Wilderness Coordinator, Administrative Assistant, Fee Collection Supervisor, and 5 additional staff; Education Office (space for 6 staff); Mail Room; Administrative Storage; training/ meeting room (space for 40 people and audio/visual capabilities); interpretive work preparation space; kitchen; restroom; janitor's closet
Law Enforcement Ranger Operations	2,450	Patrol Ranger Supervisor's office; Ranger office (space for 6 people); work area; storage; evidence room; EMS and WFE vehicle storage; restroom
SNPA	1,400	Executive Director's office; sales area; open office (space for 3 people); storage room (includes a work area); restroom
Facilities	2,100	Lobby; mechanical room (electrical and HVAC equipment); CPU server room; janitor's closets; elevator and equipment room; restrooms
Pedestrian Circulation in Building	1,200	Corridors, stairwell, passageways
Total for All	14,450	Approximate interior space requirements (outside corner to outside corner square footage is approximately 16,400)

Source: NPS, 2003a

The upper floor of the building would contain the visitor/education center and book sales area, interpretive exhibits, and multi-purpose room for the orientation film/meeting space for school groups for use during inclement weather. Approximately 1,000 square feet of museum space would interpret the currently untold, Civilian Conservation Corps (CCC) story at Shenandoah National Park. This museum exhibit would be artifact-rich and tell the primary park theme about the CCC and the early development of the park infrastructure. Orientation area exhibits would include a large central topography map and an existing computer interactive Wilderness touch-screen CD. The orientation and sales area would be partially intermixed. The Air Quality Discovery Station would also be located in this area. This exhibit would be provocative and designed to motivate critical thinking and creative problem solving among its viewers. As an orientation center, Panorama would provide information on hiking, backcountry camping, and other activities and amenities in the park. The interpretive goal is for the visitor to leave the center excited about his/her opportunities to experience the park. Exhibits would be family-friendly and appeal to a wide range of learning styles (NPS, 2003b).

Offices and workspace would also be provided on the lower floor of the renovated building for interpretive staff, education staff, a fee management supervisor, the backcountry/wilderness coordinator, and law enforcement rangers. Office and book storage space for the SNPA and a multipurpose room for public programs and staff training with table workspace and audio/visual (A/V) capabilities would also be provided on the lower level. An approximately 900-square-foot

two-bay vehicle storage facility would be included as part of the Panorama building addition for the District's SAR/EMS vehicle and WFE storage (NPS, 2003a; 2003b; 2002b). The existing contact station in the upper (eastern) parking area that currently serves as the backcountry permitting station would be rehabilitated into a vending area and yard equipment storage area. **Figure 4** shows proposed views of the rehabilitated Panorama facility.

Alterations would include installation of an elevator from the restrooms on the lower level and a stairway addition to meet ADA compliance. Work would include all necessary utilities, exterior repairs, and the installation of energy efficient windows. As part of this proposal, approximately 3,000 linear feet of existing 4-inch water line leading from the Panorama facility to an existing water supply reservoir located on higher ground would be replaced with 8-inch water line. This action is being proposed to provide adequate water flow for fire suppression at the Panorama building. This project is needed because various mandates, including the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, NPS DO-58, *Structural Fire Management*, and DO-50B, *Occupational Safety and Health* Program, require fire suppression in buildings for the protection of employees and property (structures and equipment). A flow test was conducted on the existing main as part of the park-wide *Fire Protection and Security Study* in 2002. The test concluded that the existing water pressure was not adequate to support fire suppression at Panorama (NPS, 2002a). Replacing the water line is required for the NPS to occupy the building (NPS, 2003b).

Figure 5. Existing Water Line Corridor

As part of pipe installation, the existing corridor right-of-way, which is not currently maintained, would be enlarged by approximately 10 feet by vegetative clearing, to provide a corridor with a maximum width of 20 feet for construction. Over the long-term, the maintained width of this corridor would be 12 feet (minimum) to 20 feet (maximum), depending on location. The proposed route of the new water line would follow the old 4-inch line trench (see **Figure 5**) where practical to reduce rock excavation associated with a new trench. The proposed route is shown in **Figure 6**.

Construction would likely begin in winter 2005, and last about one year. Since the new building addition would approach a moderately steep hillside, the estimated fill required to support the adjacent walk and safe round-off would be approximately 260 cubic yards. Unsuitable soils from foundation excavation would be removed from the site; all other excavated soils would be used to obtain necessary fill requirements to the west of the new addition (NPS, 2003a). Construction disturbance would not exceed 10 feet from any exterior wall of the building. Existing asphalt and concrete pavements/parking areas would be protected (NPS, 2003a).

Figure 3. General Site Layout under the Preferred Alternative

Figure 4. Proposed Views of Panorama Building Rehabilitation

Figure 6. Proposed Water Transmission Line Route

The new Panorama Visitor/Education Center would be operated year-round, and would be a free facility. A minimum of 18 and a maximum of 25 people would work at the rehabilitated Panorama facility once open. Of these, approximately 5 would be new staff (Herzog, 2003b), and would be Visitor Use Assistants.

Staging Area

Figure 7. Proposed Equipment Staging Area (Lower Level/Western Parking Area)

Various types of heavy equipment, including one or more trackhoes, backhoes, loaders, compactors, graders, trucks (dump, service), and other typical construction equipment, would be used during construction. Equipment used for construction would primarily be staged in the paved parking area off U.S. 211 (the lower level/western parking area). This parking area is shown in **Figure 7**. If additional room is necessary for equipment and material staging, the paved parking area off Skyline Drive (the upper level/eastern parking area) would be used. Equipment would be fueled at the equipment staging area during construction, and all fuel storage would be restricted to this paved area. Staging equipment on the existing paved area would minimize impacts to soils and water resources by reducing soil compaction, rutting, surface water runoff, and associated erosion. Once construction is complete, all staging areas would be returned to pre-construction conditions, if necessary.

Sustainability

The NPS has adopted the concept of sustainable design as a guiding principle of facility planning and development. NPS *Management Policies 2001* and *Guiding Principles of Sustainable Design* require the NPS to reuse existing structures and disturbed sites instead of new construction, wherever and whenever feasible, and to conserve energy through sustainable design. The objectives of sustainability are to design NPS facilities to:

- Minimize adverse effects on natural and cultural values;
- Reflect the environmental setting of natural and cultural values;
- Maintain and encourage biodiversity;
- Construct and retrofit facilities using energy-efficient materials and building techniques;
- Operate and maintain facilities to promote their sustainability; and
- Illustrate and promote conservation principles and practices through sustainable design and ecologically sensitive use.

Essentially, sustainability is living within the environment with the least impact on the environment. The Preferred Alternative subscribes to and supports the practice of sustainable planning, design, and use of the road and associated public and administrative facilities serviced by it through mitigation, preparation, design, and materials.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with DO-12, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents, including EAs. The environmentally preferred alternative is determined by applying the criteria suggested in NEPA, which is guided by the CEQ. As stated in Section 2.7 (D) of the NPS DO-12 Handbook, "The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in NEPA (Section 101(b))." This environmental policy is stated in six goal statements, which include:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain wherever possible, an environment which supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA, 42 U.S.C. 4321-4347).

In sum, the environmentally-preferred alternative is the alternative that, not only results in the least damage to the biological and physical environment, but also that best protects, preserves, and enhances historic, cultural, and natural resources.

The approach for incorporating these national goal statements into the determination of the environmentally preferable alternative used a qualitative comparison rating of the alternatives under consideration. Each alternative assessed in this EA was rated as to how well it contributes to meeting each of the six NEPA goals. Given the very general nature of the goal statements, with no specific measurable parameters identified, precise, quantitative ratings are not feasible. Therefore, five general qualitative levels were established to rate alternatives as to how well they contribute to meeting each goal: 1) the alternative contributes substantially to meeting that goal (denoted by two check marks); 2) the alternative contributes somewhat to meeting that goal (denoted by a single check mark); 3) the alternative neither contributes to nor detracts from meeting that goal (denoted by a circle); 4) the alternative somewhat interferes with that goal achievement (denoted by an "X"); and 5) the alternative substantially interferes with that goal achievement (denoted by "XX"). Each rating was judgmentally based on an alternative's

predicted impacts on the relevant environmental resources. For example, an alternative that adversely affects historic, cultural, and natural resources would get a low rating in regard to NEPA goal #4.

A summary of this process for each alternative is presented in **Table 2**. Below the table, a discussion is provided for each alternative explaining the basis for each of the ratings given to that alternative. Identification of the environmentally preferred alternative involved comparing the entire set of ratings for each alternative. In the absence of any indication of Congressional intent otherwise, each of the six NEPA goal statements was considered equally important.

Table 2. Selection of the Environmentally-Preferred Alternative

National Environmental Policy Act Goals	Alternative A (No Action)	Alternative B (Preferred Alternative)
Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.	√	√√
Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.	X	√√
Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.	X	√√
Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, whenever possible, an environment that supports diversity, and variety of individual choice.	√	√√
Achieve a balance between population and resource use, which will permit high standards of living and a wide sharing of life's amenities.	√	√√
Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	O	O

Legend: Contributes substantially to meeting the goal = √√
Contributes somewhat to meeting the goal = √
Does neither contributes additionally to nor interferes with meeting the goal = O
Interferes somewhat with that goal achievement = **X**
Interferes substantially with that goal achievement = **XX**

Alternative A (No Action)

The No Action alternative is not the environmentally preferred alternative for the following reasons:

- The No Action alternative does not contribute as much to meeting goal #1 as the Preferred Alternative (contributes somewhat to meeting goal #1). While the park is currently meeting its trustee responsibilities, and would continue to meet these responsibilities under the No Action alternative, this alternative does not provide the additional benefits to succeeding generations of having a year-round visitor education center available at the park or of providing the opportunity to tell and interpret the currently untold story of the park's CCC heritage.

- While the No Action alternative would not impact natural or cultural resources, visitor and worker safety would continue to be at risk under this alternative (alternative interferes somewhat with achieving goals #2 and #3). Due to the physical separation between workers and response vehicles, law enforcement ranger services would continue to be inefficient and emergency response times too high in the event of accidents or fires. This would pose a continued risk visitor safety, resulting in a long-term, moderate, adverse impact on human health and safety park-wide, and would be considered an undesirable and unintended consequence of the No Action alternative. In addition, existing fire suppression infrastructure in the Panorama building would continue to be inadequate for fire suppression and would continue to be in violation of the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*. The No Action alternative is not in compliance with NPS policies for protecting the safety and health of its employees, contractors, volunteers, and partnerships. This would result in a continued, long-term, localized, minor to moderate, adverse impact on employee safety.
- The No Action alternative does not contribute as much to meeting goal #4 as the Preferred Alternative (contributes somewhat to meeting goal #4). While the No Action alternative would not adversely affect historic, cultural, or natural resources, this alternative would not allow for the opportunity to tell and interpret the currently untold story of the park's CCC heritage. In addition, while existing conditions provide a diversity and variety of individual choice in terms of visitor experience at the park, under the No Action alternative, many of these experiences would continue to be limited to seasonal use.
- The park currently allows for a good balance between population and resource use; visitor demand does not exceed supply (contributes somewhat to meeting goal #5). The No Action alternative would not change this balance.

Alternative B (Preferred Alternative)

The Preferred Alternative is the environmentally preferred alternative for the following reasons:

- The Preferred Alternative contributes a greater degree to meeting goal #1 than the No Action alternative (contributes substantially to meeting goal #1). While the park is currently meeting its trustee responsibilities, and would continue to meet these responsibilities under the Preferred Alternative, this alternative would provide the additional benefits to succeeding generations of having a year-round visitor education center available at the park and of providing the opportunity to tell and interpret the currently untold story of the park's CCC heritage.
- The Preferred Alternative would assure a safe and productive environment for workers and visitors and would attain the widest range of beneficial uses of the environment without degradation, risk to human health and safety, or other undesirable consequences (contributes substantially to meeting goals #2 and #3). While natural and cultural resources would be negligibly impacted under the Preferred Alternative, emergency vehicle and staff response times to accidents and wildland fires would be greatly reduced

from current response times, and the effectiveness of law enforcement and emergency response staff increased, resulting in a long-term, moderate, beneficial impact on human health and safety at the park. In addition, the Preferred Alternative is in compliance with the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and NPS Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*, for the protection of employees and property (structures and equipment). Providing adequate fire infrastructure in the Panorama building would result in long-term, minor to moderate, localized, beneficial impacts on employee safety.

- The Preferred Alternative attains the widest range of beneficial uses of the environment without degradation by providing additional visitor experiences at the park while reusing existing infrastructure rather than new construction (contributes substantially to meeting goal # 3).
- The Preferred Alternatives provides for an environment that supports greater diversity and a variety of individual choice than the No Action alternative, while only negligibly affecting cultural and natural resources (contributes substantially to meeting goal #4). While the Preferred Alternative would affect the cultural landscape along Skyline Drive, this impact would be mitigated to preserve the landscape over the long-term. The Preferred Alternative would provide visitors with an enhance view of the park's historic and cultural heritage by allowing for the interpretation of its CCC heritage, which is a story currently untold at the park. In addition, while existing conditions provide a diversity and variety of individual choice in terms of visitor experience at the park, under the Preferred Alternative, additional visitor informational and interpretive services would be provided at a central location within the park, and visitor experience could occur year-round (not just limited to seasonal use, as it is currently).
- While the park currently allows for a good balance between population and resource use, the Preferred Alternative would enhance this balance and the sharing of life's amenities through the provision of year-round (not just seasonal) visitor experience and the potential for the creation of a new CCC museum (contributes substantially to meeting goal #5).

MITIGATION MEASURES

Mitigation measures are presented as part of the Preferred Alternative. These actions have been developed to lessen the adverse effects of the Preferred Alternative.

During construction activities, standard best management practices (BMPs), such as those described in *Virginia Erosion and Sediment Control Handbook,* would be implemented. Implementation of these BMPS would control or reduce potential adverse impacts from soil erosion, surface water runoff, and sedimentation. In addition to these measures, other measures would be implemented to minimize or avoid adverse impacts on environmental resources as a result of implementation of the Preferred Alternative. **Table 3** lists these other measures according to the resource area affected. The NPS would implement these measures as part of the Preferred Alternative.

Table 3. Mitigation Measures By Resource Area	
Resource Areas	**Mitigation Measure**
Natural Resources	• The NPS would require the construction contractor to comply with the *Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations* (VESCL&R), VESCL&R Minimum Standards, *General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges of Storm Water from Construction Activities*, and the guidance provided in the *Virginia Erosion and Sediment Control Handbook* to avoid and minimize erosion and sediment runoff during construction. • Construction would not be conducted when soils are saturated, such as during or immediately following rain events, to minimize or eliminate the potential for compaction. • The proposed route of the new water line would follow the old 4-inch line trench where practical to reduce potential rock excavation associated with a new trench. • Construction equipment and vehicle servicing (oil and hydraulic fluid changes, etc.) would be conducted on paved surfaces and minor spill clean-up supplies and materials would be kept on-site for first response. • The NPS would require the contractor to be prepared to respond to minor spill situations that occur during construction. • Disturbed areas would be revegetated with landscape materials immediately adjacent to the building or natural seed mixes at more distant locations.
Visitor Use & Experience/ Recreation	• The NPS would continue to allow visitors to use the Appalachian Trail/ Mary's Rock access point adjacent to the Panorama facility during construction through the provision of a pathway along the stone retaining wall behind the Panorama building. The NPS would require the construction contractor to erect orange fencing around the equipment staging area (western parking area), separating exposed equipment from this pathway to the Trail access point. • To protect the extensive area of special flagstone walk adjacent to the south side of the Panorama building during construction, the new water line route would deviate from the existing alignment as necessary to bypass this area.
Socioeconomic Environment	• The NPS would require the construction contractor to install and maintain all required signage per the *Manual on Uniform Traffic Control Devices* around the construction site and along nearby roads. • The NPS would require the contractor to ensure that no trenches are left exposed overnight; excavated trenches would be refilled by close of work for the day. • The NPS would require the construction contractor to install and maintain barricades or fences around the construction site to prevent non-contractors and the public from entering the construction area. • The NPS would require the construction contractor to follow NPS construction contract standards during construction. • The NPS would require the contractor to post construction warning signs to notify employees and the public of the construction site and dangers at the site. • All fuel and other hazardous materials handling and storage would be restricted to the paved staging area (parking area at Panorama) and minor spill clean-up supplies and materials would be kept on-site for first response. In the event of an accidental spill, the NPS would require the construction contractor to contact the park Dispatch Office, and to respond to minor spill situations. In the event of a major spill, the Dispatch Office would contact hazardous material cleanup contractors. All fuel or chemical spills would be required to be contained and cleaned up in

	accordance with U.S. Environmental Protection Agency (USEPA) and Occupational Safety and Health Administration (OSHA) regulations.
Additional Protective Measures	• No construction would occur within the stream on the project site, and no equipment would need to enter the drainage. • The NPS would require the construction contractor to powerwash all construction vehicles and equipment prior to their initial arrival at the park to remove seed and plant material. • Efforts will be made to assure that any fill material that is imported to the site be free of exotic plants and seeds. • The NPS would require the project area to be surveyed by an NPS biologist prior to the onset of construction for the presence of listed/rare species. • The NPS would provide construction workers with a photograph of the Shenandoah salamander and would instruct workers to stop all work if a Shenandoah salamander is encountered at the site, and notify the NPS immediately. • Construction activities would be conducted outside the footprint of the hemlock stand located east of the upper parking lot at the Panorama facility and no disturbance to this stand would be permitted. The NPS would monitor the stand to ensure construction activities are not having an adverse impact on the hemlock stand. • To reduce construction equipment emissions, the park would require that construction workers apply appropriate mitigating measures limiting idling of construction vehicles. • Ground disturbance would be coupled with water sprinkling to reduce dust. • Construction noise would be mitigated through the use of state-of-the-art noise reduction technology on construction equipment to the maximum extent possible to minimize the amount of noise from construction activities and by maintaining daylight work hours. • Any lighting, such as security lighting, would be directional and shielded to prevent intrusions into the night sky. • Construction vehicles would largely be restricted from using Skyline Drive to access the construction site. • Impacts on the highway surface during installation of the new water main would be avoided through boring and jacking. • When construction activities are occurring adjacent to the roadway during replacement of the water line, the lane adjacent to the construction zone would be closed to traffic, and traffic would be diverted around the construction zone into the one free lane with the use of flaggers. • • The NPS would maintain the section of the water line corridor from U.S. 211 to the administrative road at 12 feet to reduce adverse impacts on Skyline Drive's cultural landscape. Where the corridor crosses Skyline Drive, the NPS would allow vegetation to grow in the corridor to reduce impacts on the landscape.

GENERAL CONSTRUCTION SCHEDULE AND COSTS

Construction would begin in October 2005 and last about 12 months, although this could change depending on costs, adverse weather, or other unplanned factors. The total estimated cost of the project is $5.1 million in 2004 dollars.

ALTERNATIVES CONSIDERED BUT DISMISSED

CEQ regulations for implementing NEPA require that Federal agencies explore and objectively evaluate all reasonable alternatives to the Preferred Alternative, and to briefly discuss the rationale for eliminating any alternatives that were not considered in detail. This section describes alternatives to the Preferred Alternative that were considered and eliminated from further study, and the rationale for their elimination.

Alternatives for the Visitor/Education Center

Two different sets of alternatives for the proposed new visitor/learning center were considered, one involving different locations for the center, and one involving alternatives for the proposed building addition to the Panorama facility. These alternatives are discussed below, along with the rationale for their elimination from further consideration.

Alternative Locations for the Visitor/Education Center

- An alternative of constructing a new education center to provide visitor services and modifying the existing Panorama facility for NPS operational functions was considered. Under this alternative, the Panorama facility would be rehabilitated and remodeled as described under the Preferred Alternative; however, no addition to the structure would be made. Instead, a new, free-standing structure would be constructed for visitor educational services. This alternative was eliminated from further consideration because it does not optimize the park's staff or resources in the most efficient manner. The park's preference is to have all functions (visitor services, sales, education, and park staff) in one location. Under this alternative, two buildings would require constant staffing, and therefore, more personnel to operate (Crane, 2003a). In addition, construction of a new building to house visitor services would result in greater environmental impact, due to additional site clearing and ground disturbance. Site constraints, including steep topography, would make building a new structure on the site very difficult.

- An alternative of constructing an entirely new facility to house the proposed visitor/education center and NPS operations was considered. This new facility would be approximately 16,000 square feet, and would be located east of the existing facility, adjacent to the U.S. 211 off ramp. This alternative was eliminated for sustainable reasons. In accordance with NPS *Management Policies 2001* and *Guiding Principles of Sustainable Design*, the NPS should reuse existing structures when at all feasible and possible. The existing Panorama facility fits the park's needs, and cost saving would occur through the rehabilitation of this structure. The construction of a totally new structure, providing all of the park's needs, would greatly impact the park as far as new utility lines, roads, and parking areas. A new site would need to be strategically selected and cleared. The terrain in this part of the park would call for

costly cut and fill preparation of a new site. In addition, construction of a new facility would require a larger area of disturbance and result in much greater environmental impacts. By rehabilitating the Panorama building, more than two-thirds of the new facility would be within the building footprint of the existing structure, and no new parking areas and roads would need to be built (Crane, 2003a).

Alternatives for the Proposed Panorama Building Addition

- An alternative involving constructing a smaller building addition of 1,900 square feet for facility staffing was considered. Under this alternative, the existing Panorama facility would still be remodeled and rehabilitated as a visitor/education center, but law enforcement ranger operations, which currently function out of the basement of Panorama, would be eliminated, as well as 50 percent of administrative space. Elimination of office space for the law enforcement ranger would require their placement within the Headquarters Area of the park. Locating law enforcement ranger operations within the Headquarters Area would remove this work group from the park, increasing response time in the event of emergencies and decreasing efficiency. In addition, placing this operation at Headquarters would require renovating two housing units into offices, which would involve increased costs – both project and operational) (NPS, 2003b; 2002b). Therefore, this alternative was eliminated from further consideration.

- An alternative of not constructing an addition to the existing Panorama facility was also considered. Under this alternative, the existing Panorama facility would still be remodeled and rehabilitated as a visitor/education center, but law enforcement ranger operations, which currently function out of the basement of Panorama, educational staff offices, and the Fee Supervisor and Backcountry Coordinator offices would be entirely eliminated from the building. Office space for the interpretation staff would be reduced by approximately 40 percent, and workspace would be reduced by more than 50 percent (NPS, 2002b). As discussed above, elimination of law enforcement ranger office space would require their placement within the Headquarters Area of the park, which would increase their response time in the event of emergencies, decrease their operational efficiency, and would increase project and operational costs due to required renovation of two housing units. This alternative would also eliminate the potential for educational staff (Shenandoah National Park Association) office space in the Panorama building. Eliminating office space for this group away from the location in which they hold programs is highly inefficient. In addition, interpretation office space would be reduced by 40 percent and workspace by more than 50 percent, which is highly inefficient since the interpretive staff would be operating the facility (NPS, 2003b; 2002b). Therefore, this alternative was eliminated from further consideration.

Alternatives for Additional Vehicle Storage Facility

Several alternative locations for additional SAR/EMS and WFE vehicle storage were considered. These alternatives are described below, along with the rationale for their elimination.

- An alternative of constructing the SAR/EMS and WFE storage bays in the Headquarters Area was considered. This alternative was eliminated because response times for SAR/EMS and WFE workers and equipment would be drastically increased if these storage bays were to be located outside the park in the Headquarters Area. Such an increase in response time not only would have an adverse impact on public health and safety, but would also eliminate the park's first response capabilities in the event of an emergency or wildland fire (NPS, 2003c).

- An alternative of constructing a WFE storage bay and rehabilitating the existing SAR/EMS storage bay at Piney River was considered. Under this alternative, the office location for the responding units would be located at the Panorama facility, while SAR/EMS and WFE vehicle storage would be located at Piney River, approximately 11 miles north of the Panorama facility. Response times would not be decreased under this alternative since responding units would still have to travel the approximately 11 miles to Piney River to get the emergency vehicles prior to responding to the emergency. In doing so, it is possible that SAR/EMS workers could pass an emergency incident en route to retrieving the SAR/EMS/WFE vehicle. In addition, Piney River is a seasonal operation, and SAR/EMS/WFE services are considered year-round operations. Since the route to Piney River would not be maintained during the winter (i.e., snow plowing would not occur), it may be impossible for NPS staff to reach the area during an emergency in the winter. [Note: As discussed in detail later in this document, NPS ranger staff currently have to relocate major equipment from Piney River to the Headquarters Area prior to the onset of winter months to avoid this problem. Piney River is located at a higher elevation than other park facilities, and as such, conditions at the site are more extreme during winter months (Freeland, 2004).] While Piney River was formerly used year-round, due to the reorganization of several park divisions, the park concluded that year-round operations at Piney River were neither economically nor operationally efficient (NPS, 2003c; Herzog, 2003a). Therefore, this alternative was eliminated from further consideration in this EA.

- An alternative of constructing an SAR/EMS storage bay at the Panorama facility and a WFE storage bay at Piney River or in the Headquarters Area was considered. While locating SAR/EMS equipment and vehicles at Panorama, where ranger staff offices are located, would greatly decrease response times of the staff in the event of a non-fire related incident, permanently locating WFE vehicles and equipment away from ranger staff offices would not decrease currently high response times in the event of a wildland fire. Typically, two groups of NPS employees operate the WFE and associated equipment: law enforcement rangers and wildland fire crews. The ranger staff provides the first response in the event of a fire emergency, and this initial attack is then augmented by seasonal fire crews, who work only during the visitor and fire seasons (Freeland, 2004). NPS law enforcement rangers would continue to work out of the Panorama facility, located approximately 11 miles from Piney River and about 4 miles from the Headquarters Area (which is outside the park). These distances would continue to reduce the initial attack on a wildland fire at the park, since ranger response times to fires would not be decreased under this alternative. While the Headquarters Area is located only about 4 miles from the Panorama facility, these 4 miles are

away from the park; staff would have to drive to the Headquarters Area and back again prior to traveling toward a fire emergency. In addition, continued separation of ranger staff from firefighting equipment would result in a continued lower efficiency of park operations, since ranger staff would have to be away from their offices/work space in order to perform maintenance/upkeep on firefighting equipment or to provide staff training on the equipment (Freeland, 2004). Therefore, this alternative was eliminated from further consideration.

Alternatives for the Water Line

One alternative to the installation of an 8-inch water line from the Panorama facility to the existing water supply reservoir was investigated: the installation of a 6-inch water line. This alternative was rejected because a 6-inch water line would not be able to supply water at the minimum required pressure (41 pounds per square inch) for adequate fire protection (NPS, 2003a).

COMPARISON OF THE ALTERNATIVES

Table 4 compares and contrasts the alternatives considered in detail in this EA, including the degree to which each alternative accomplishes the purpose or fulfills the need identified earlier in this EA.

Table 4. Comparison of the Alternatives and Extent to Which Each Alternative Meets Project Objectives

Alternative A (No Action)	Alternative B (Preferred Alternative
While the Shenandoah National Park would still take possession of the Panorama facility from ARAMARK, the facility would not be rehabilitated or remodeled as a visitor/education center. The gift shop would be closed, but NPS law enforcement ranger staff would continue to work out of their current office space within the building. No vehicle storage area for an SAR/ EMS vehicle or a WFE would be constructed.	The Panorama building would be rehabilitated and remodeled and a 2,820-square-foot 2-story building addition would be constructed in order to convert the existing restaurant/gift shop/law enforcement staff offices into a year-round visitor/education center/ CCC museum and work space for all work groups (visitor education, interpretation, law enforcement, fee collection, and backcountry/wilderness coordinator) and the SNPA (sales, storage, and office space). As part of the building addition, a vehicle storage structure for an SAR/EMS vehicle and a WFE would be constructed.
No construction to ensure compliance with ADA is scheduled for the foreseeable future.	An elevator from the restrooms on the lower level and a stairway addition would be installed to meet ADA compliance.
The water transmission line leading to Panorama from a water supply tank located on higher ground would not be replaced, and the building would continue to	The existing 4-inch water line leading to the facility would be enlarged to provide adequate fire flow to meet present NFPA regulations.

be in non-compliance with NFPA regulations.	
Meets Project Objectives? No. Under the No Action alternative, visitor and employee safety would not be improved, and would continue to be compromised due to inefficient emergency response in this part of the park and inadequate fire suppression infrastructure in the Panorama building. No improvements to the infrastructure in the Panorama building are scheduled for the foreseeable future. The Panorama building would continue to be in violation of Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, NPS DO-58, *Structural Fire Management*, Reference Manual #50B and DO-50B, *Occupational Safety and Health* Program. No improvements in visitor experience and enjoyment of the park would occur. The park would continue to have no year-round visitor use facility. The efficiency, reliability, and sustainability of park operations would not be improved.	**Meets Project Objectives?** Yes. Visitor and employee safety would be improved through increases in the efficiency of emergency response in this part of the park and improved fire suppression infrastructure in the Panorama building. The Panorama building would be in compliance with Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, NPS DO-58, *Structural Fire Management*, Reference Manual #50B and DO-50B, *Occupational Safety and Health* Program. Visitor experience and enjoyment of the park would be enhanced, and the park would finally have a year-round visitor use facility. The efficiency, reliability, and sustainability of park operations would be improved through housing several park functions in one centrally located building.

IMPACT COMPARISON MATRIX

Table 5 compares the potential environmental impacts resulting from the No Action and Preferred Alternative (Alternatives A and B, respectively). Potential impacts are grouped according to environmental resource area or component.

Table 5. Impact Comparison Matrix

Resource Area	Alternative A (No Action)	Alternative B (Proposed Action)
Natural Resources	• No direct, indirect, or cumulative impact on the park's natural resources	• Short-term, negligible, localized impacts on soils from potential increased erosion, runoff, and compaction during construction, if mitigation measures are implemented • Long-term, negligible to minor, adverse impacts on soils from vegetation removal along the water line corridor • Long-term, negligible impact on and loss of soils from increase in impervious surfaces from new building addition • Cumulative soils impacts would be adverse, localized, negligible to minor over the short-term and minor over the long-term
Visitor Use and Experience/ Recreation	• No new direct or indirect impacts on visitor use and experience/recreation at the park • Continued long-term, minor to moderate, adverse effects on visitor use and experience at the park due to the lack of a year-round visitor facility, closure of the Panorama gift shop, and the lack of exhibit space for certain artifacts in the park's museum collections relating to the CCC • No visitor contact would be provided at the Panorama facility • Long-term, minor, adverse, cumulative impact on visitor use and experience from the inability of a future CCC museum to be developed at the site	• Short-term, negligible, localized effects on recreation during construction due to the presence of workers and equipment, noise generated from equipment and vehicles, and increased construction truck and traffic and associated delays • Long-term, moderate, beneficial impacts on visitor use and experience and recreation due to year-round operation, the building's central location, benefits to visitor safety, and the provision of informational and interpretive services • Long-term, moderate, beneficial impacts to school groups due to the facility being open throughout the school year • Long-term, minor to moderate increase in visitation during winter • Alternative would contribute to long-term, park-wide, moderate, beneficial, cumulative impacts on visitor use and experience
Socioeconomic Environment, Including Park Operations	• Long-term, localized (with the potential to be park-wide if other park projects or operations are affected), minor to moderate, adverse impacts on park operations from operation and maintenance costs and efforts associated with operating the Panorama building as limited office space • Panorama and its associated infrastructure would remain non-compliant with the ADA and other required policies and laws over the long-term, resulting in localized, minor to moderate, adverse impacts on utilities and infrastructure	• No effects on park operations from construction activities • Long-term, localized, negligible to minor, beneficial impact on park operations from the creation of employment at Panorama • Long-term, localized, negligible impacts from operation and maintenance costs of the new building • Long-term, negligible to minor, increase in payments to NPS from SNPA operations at Panorama • Panorama and its associated infrastructure would become in compliance with the ADA and other required policies and laws over the long-term, resulting in localized, minor to moderate, beneficial impacts on utilities and infrastructure

Table 5. Impact Comparison Matrix		
Resource Area	**Alternative A (No Action)**	**Alternative B (Proposed Action)**
	• Long-term, regional, moderate, adverse impacts on park operations due to continued high emergency response times and inefficient park emergency response operations as a result of the separation of staff from emergency response equipment • Long-term, minor to moderate, adverse effects on park functions and services from lack of equipment maintenance and training space nearby ranger staff offices and from continued storage of equipment outdoors during the winter; impacts would extend to the region served by the District ranger staff • No potential to eliminate rented trailers and other substandard office space from the Headquarters Area, resulting in continued long-term, minor, adverse impact on park operations and costs • Long-term, moderate, park-wide, adverse impacts on human health and safety due to continued separation of District law enforcement personnel and emergency response equipment and continued high emergency response times in the event of accidents or fires • Alternative non-compliant with the ADA, Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and NPS DO-50B, *Occupational Safety and Health Program* • Long-term, localized, minor to moderate, adverse impact on employee safety from inadequate fire suppression capabilities of the Panorama building	• Long-term, moderate, beneficial impacts on park operations due to decreased emergency response time and consolidation of park functions into a centrally located facility • Long-term, minor to moderate, beneficial effects on park functions and services from providing equipment maintenance and training space nearby ranger staff offices and from eliminating the need to store equipment outdoors during the winter; impacts would extend to the region served by the District ranger staff • Long-term, minor, localized, beneficial impact on park operations and costs from the elimination of rented trailers and other substandard office space from the Headquarters Area • Short-term, negligible, localized impacts on human health and safety during construction, with mitigation measures • Negligible potential for a fuel or hazardous material spill to occur during construction and adversely affect human health and safety • Long-term, moderate, beneficial impacts on human health and safety from decreased response time and increased effectiveness of law enforcement and emergency response staff on the District and from replacement of the water line serving the Panorama facility • Alternative would be in compliance with the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, and NPS DO-50B for the protection of employees and property (structures and equipment) • Alternative would contribute to long-term, moderate, park-wide, beneficial, cumulative impacts on human health and safety and park operations

AFFECTED ENVIRONMENT

In accordance with CEQ regulations (40 CFR 1502.15), this section describes the existing conditions of the area(s) to be affected by the alternatives under consideration in this EA. As stated in DO-12, the NPS NEPA compliance guidance handbook, only those resources that may experience impact or be affected by alternatives under consideration are described in this section. Detailed information on resources in Shenandoah National park may be found in the GMP and the park's *Resources Management Plan*. A summary of the resources associated with this project follows.

NATURAL RESOURCES

Soils

The project site is located at the junction of U.S. Highway 211 and Skyline Drive. The existing facilities are situated on a hillside of moderate to steep topography and vegetated with grass, deciduous and evergreen trees, and shrubs.

The Panorama facility is underlain by soils of the Myersville-Catoctin complex, 15 to 35 percent slopes, very stony. These soils consist of 45 percent Myersville gravelly silt loam and similar inclusions, 30 percent Catoctin silt loam and similar inclusions, and 25 percent contrasting inclusions (including areas in drainageways, coves, or benches and soils with an extremely stony surface layer). Myersville soils are deep, well-drained, silt loam soils with moderate permeability. Catoctin soils are moderately deep, well-drained silt loam soils with moderately rapid permeability. Both soil types are rated as severe for shallow excavations (which include trenches or holes dug to a maximum depth of 5 to 6 feet for utility lines, open ditches, and other purposes), and severe for dwellings and small commercial buildings, due to slope and depth to rock. A severe rating indicates that soil properties and/or site features are so unfavorable or so difficult to overcome that special design, increases in construction costs, and possibly increased maintenance are required (NRCS, 2001).

VISITOR USE AND EXPERIENCE/RECREATION

There are currently three visitor/information centers along Skyline Drive in the Shenandoah National Park. These include the Loft Mountain Information Center, located at milepost 79.5, Byrd Visitor Center, located at Big Meadows at milepost 51, and Dickey Ridge Visitor Center, located at milepost 4.6. These visitor centers provide information, exhibits, illustrated programs, and offer sales of books, slides, posters, and maps about the park. All of these facilities are open seasonally from spring to fall (NPS, 2002c). These existing visitor learning facilities are located at high elevations and are inaccessible in inclement weather and during winter months. As a result, existing and potential visitor learning programs are limited by lack of a year-round facility.

The Panorama building, located between the Dickey Ridge and Byrd visitor centers at milepost 31.5, originally functioned as a restaurant/gift shop/concessionaire housing facility. The restaurant was permanently closed prior to the onset of the 2002 season. In addition, the few old apartment units accessed directly from the building's exterior have not been used in approximately five years. Annual visitation counts to the existing Panorama gift shop are unknown; however, visitation is minimal, and based on ARAMARK's annual revenues from the past several years at Panorama, visitation has decreased as a result of restaurant closure.

The Panorama building is currently used as a gift shop, hiker stopover and restroom facility, and as NPS law enforcement ranger offices (on the lower level), and is open for visitation only eight months of the year, from March to October. A backcountry permitting station is located in the parking area at Panorama, and currently issues permits to visitors. In addition, two recreational facilities, the Appalachian Trail and Mary's Rock, are accessible from the Panorama facility parking area. Mary's Rock is located about one-half mile south on the Appalachian Trail. Other recreational facilities in the area include several hiking trails located within a few hundred yards of the water line corridor, and one overlook on Skyline Drive, approximately one mile south of the project area (Olson, 2003b).

The NPS Regional Director signed an amendment to ARAMARK's contract on September 04, 2001, Amendment No. 2, Concessions Contract No. CC-SHEN001-85, ARAMARK Sports and Entertainment Services, transferring Panorama to the NPS. The NPS will take possession of the building on December 31, 2004. Prior to NPS acquisition, ARAMARK will close the gift shop at the facility.

SOCIOECONOMIC ENVIRONMENT

Park Operations

Panorama Operations

The existing Panorama facility is currently owned and operated by ARAMARK, the park's concessionaire. ARAMARK employs one to two seasonal workers to operate the gift shop located at the Panorama building. As part of their contract, ARAMARK pays the NPS a franchise fee on their total gross receipts from all of their operations within the park. This franchise fee is five percent of ARAMARK's total gross receipts, and is not broken out by property (Brockwehl, 2003). **Table 6** shows the average gross receipts generated from ARAMARK's seasonal operations (April to October) at Panorama over the past five years. **Table 6** also shows the equivalent annual franchise fee given to the NPS from operations at Panorama for these years.

Table 6. Average Gross Receipts from Operations at Panorama for the Past Five Years		
Year	**Average Gross Receipts**	**Approx. Franchise Fee Payment to NPS**
1999	$286,000	$14,330
2000	$300,700	$15,035
2001	$361,700	$18,085
2002*	$253,200	$12,660
2003**	$188,400	$9,420
* Restaurant at Panorama was closed prior to start of 2002 operating season. Receipts reflect gift shop portion only. ** Figure represents year-to-date receipts—Through August with September projected.		

Source: Herzog, 2003b

In addition to this franchise fee, ARAMARK currently pays for utilities in the building and the costs associated with maintaining the building. Annual utilities for electric are estimated at $15,400. While maintenance costs for the building are not available, the park estimates these costs are +/- $100,000 a year (includes routine maintenance, grounds keeping, and supplies). Income from ARAMARK's operations at Panorama is also used to run the wastewater treatment plant that serves the building, which currently costs approximately $11,250 per month (includes operator salary) (Kicklighter, 2003).

The NPS Regional Director signed an amendment to ARAMARK's contract on September 04, 2001, Amendment No. 2, Concessions Contract No. CC-SHEN001-85, ARAMARK Sports and Entertainment Services, transferring Panorama to the NPS. According to this amendment, the NPS will take possession of the building on December 31, 2004 (regardless of whether or not the proposed renovation of Panorama occurs). Prior to the NPS taking possession of the building, ARAMARK will close the gift shop, vacate the building, and perform hazardous materials abatement for the building. Therefore, after December 31, 2004, the NPS will no longer receive the franchise fee payment from operations at Panorama. The park anticipates that this loss of income would neither be noticeable nor would it affect any park functions or facilities (Herzog, 2003b).

However, upon taking possession of Panorama, the park will start paying for utilities and building maintenance. These costs would largely be the same as those discussed above for ARAMARK; however, electricity costs could be somewhat reduced to $11,000 with the building only being used for offices post-transfer. In addition to these costs, the NPS would have to pay to run the wastewater treatment plant, which would cost an additional $135,000 per year (which includes operator salary) if the facility were run year-round (Kicklighter, 2003).

Building Compliance

In terms of fire protection, the NPS is required to follow all National Fire Protection Association (NFPA) standards, as well as NPS policies, including Life Safety Code® (NFPA 101®), NPS *Management Policies 2001* (NPS, 2001a), NPS DO #58, *Structural Fire Management*, and NPS Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*. The existing Panorama building has no fire protection or suppression systems other than an outdated high-voltage fire alarm system. In addition, a flow test was conducted on the existing 4-inch water

line leading from the Panorama facility to an existing water supply reservoir as part of the park-wide *Fire Protection and Security Study* in 2002. The test concluded that the existing water pressure was not adequate to support fire suppression at Panorama (NPS, 2002a). Various mandates, including the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, NPS DO-58, *Structural Fire Management*, Reference Manual #50B and DO-50B, *Occupational Safety and Health* Program, require fire suppression in buildings for the protection of employees and property (structures and equipment). The Panorama facility and associated water line are in need of upgrading to meet the requirements in NFPA 101®, NPS DO-58, and DO-50B. There are currently no infrastructure upgrades scheduled for the Panorama building.

In addition to inadequate fire protection and suppression systems, the existing Panorama facility is not in compliance with ADA. NPS *Management Policies 2001* and DO-42, *Accessibility for Visitors with Disabilities*, require the NPS to design, construct, and operate all buildings, and modify existing facilities, where possible, so that they are accessible to, and usable by, persons with disabilities to the greatest reasonable extent. Bathrooms at the Panorama facility are located on the lower level, with no elevator available for access.

Park Functions and Services

As stated above, the park's law enforcement ranger operations currently function out of the basement of the existing Panorama facility. This ranger staff provides emergency services, law enforcement protection, and wildland fire response to the North District. EMS and SAR vehicles and equipment for the District are currently housed at Piney River, approximately 11 miles north of the Panorama facility (Jordan, 2003). Most firefighting equipment is also currently stored at Piney River. Piney River currently operates only seasonally, and will continue to operate seasonally in the future. Seasonal operation of the facility means that, during times of low visitor use, including winter months, no water/wastewater treatment operations, generators, or fuel are provided at the facility, and no snow plowing to provide access to the facility during storms is conducted during the winter. Piney River is located at a higher elevation than other areas of the park, and as such, tends to receive larger amounts of snow and harsher winter weather than other areas. Since road conditions may be too severe for responding units to access Piney River during the winter, prior to the onset of winter, the NPS has to relocate important major rescue equipment from Piney River to the Headquarters Area for easier access. However, since are no suitable storage bays/facilities in the Headquarters Area, the NPS is forced to store the equipment outside, where it is exposed to the elements. This exposure causes vehicle batteries to drain and die and fluids in the equipment to freeze up, requiring extra maintenance and upkeep efforts (Freeland, 2004).

The District's WFE is temporarily being stored at the Headquarters Area of the park, although not in a storage bay. Typically, two groups of NPS employees operate the WFE and associated equipment: law enforcement rangers and seasonal wildland fire crews. The first response to a fire emergency is typically accomplished by the ranger staff. This response is augmented by wildland fire crews (during the visitor and fire seasons), other rangers assigned to other duties during a given shift, and in some cases, by outside agencies (Freeland, 2004).

The separation of the District's ranger staff from SAR/EMS/WFE equipment and vehicles is also posing additional problems for park operations. Since the ranger staff does not have equipment maintenance space near their offices at Panorama, the staff has to leave their offices and other duties in order to perform routine maintenance and restocking of equipment and vehicles, as well as to perform training activities for the use of the equipment. This can interrupt other ranger staff assigned duties from both increased travel time and being away from their office space/ telephones (Freeland, 2004).

Currently, five of the nine housing units and two additional trailers within the park Headquarters Area are used as office space. The rented office trailers are considered substandard office space for park operations.

Human Health and Safety

One of the core values of the NPS, as stated in NPS *Management Policies 2001* and DO-50B, *Occupational Safety and Health Program*, is the safety and health of its employees, contractors, volunteers, and the visiting public. It is the policy of the NPS to provide a safe and healthful place of employment, to protect Federal and private property from accidental damage or loss, and to meet or exceed all applicable statutory, regulatory, and policy requirements relating to safety, health, and the environment.

Park law enforcement ranger operations currently function out of the basement of the existing Panorama facility. The ranger staff that work out of Panorama provide emergency services, law enforcement protection, and wildland fire response to the North District. The jurisdiction at Shenandoah National Park is Federal Exclusive, which means that no State or local law enforcement agencies are able to respond to any law enforcement situation at the park (Jordan, 2003).

In recent years, the park has averaged 16 in-park wildland fire responses annually. Although these responses may occur any month of the year, the main fire seasons are the spring and autumn. In addition to wildland fire incidents, the park has been averaging about 450 incidents each year that require the response of park law enforcement and/or emergency service personnel. Of these, approximately 100 are motor vehicle accidents, approximately 100 are EMS calls, and about 30 are SARs. The majority of the remaining incidents are law enforcement responses (Jordan, 2003).

EMS and SAR vehicles and equipment, as well as most firefighting equipment, for the District are currently housed at Piney River, approximately 11 miles north of the Panorama facility. Other emergency response staff and equipment for other areas of the park are located in other districts and at the park Headquarters (Jordan, 2003). While Piney River used to be open year-round, due to the reorganization of several park divisions, the park concluded that year-round operations at Piney River were neither economically nor operationally efficient (NPS, 2003c; Herzog, 2003a). Piney River currently operates only seasonally, as discussed above, and will continue to operate seasonally in the future.

The District's WFE is temporarily being stored at the Headquarters Area of the park, although not in a storage bay. Typically, two groups of NPS employees operate the WFE and associated equipment: law enforcement rangers and seasonal wildland fire crews. The first response to a fire emergency is typically accomplished by the ranger staff. This response is augmented by wildland fire crews (during the visitor and fire seasons), other rangers assigned to other duties during a given shift, and in some cases, by outside agencies (Freeland, 2004).

As stated above, the office location for the law enforcement ranger staff is at the Panorama facility. While many incidents requiring law enforcement ranger staff response at the park do not necessitate the use of the larger-scale equipment and vehicles housed at Piney River and the Headquarters Area, this separation of responding crew and equipment results in a much higher response time to larger-scale, more severe emergency situations. For most situations that do not require larger, specialized equipment (i.e., ranger staff can respond in their own vehicles), personnel is typically on the scene within 10 to 20 minutes. However, for SARs, wildland fires, and other larger-scale incidents requiring the use of additional equipment, law enforcement rangers have to travel the approximately 11 miles to Piney River (or 4 miles outside the park to the Headquarters Area) to get the appropriate vehicles and equipment prior to responding to the emergency. This can add a substantial amount to response times in the event of an emergency, and this amount of additional time varies depending on the location and severity of the incident. For incidents occurring on Skyline Drive north of Piney River, stopping at Piney River to obtain the appropriate equipment would not noticeably affect NPS response times (since they would be passing Piney River to respond to the emergency). However, this scenario does not apply to most incidents. For incidents occurring in the backcountry, or on Skyline Drive south of Piney River, going to Piney River to obtain the appropriate equipment can add an additional 15 to 30 minutes on to response times (Freeland, 2004). One worst-case scenario would be if the incident were to occur off Skyline Drive south of the Panorama facility. This could require ranger staff at the Panorama building to drive 11 miles north on Skyline Drive to Piney River to get the appropriate responding equipment, back the 11 miles south on Skyline Drive before heading to the scene of the incident.

In terms of fire protection, the NPS is required to follow all NFPA standards, as well as NPS policies, including Life Safety Code®, NPS *Management Policies 2001*, NPS DO #58, and NPS Reference Manual #50B and DO-50B. The existing Panorama building has no fire protection or suppression systems other than an outdated high-voltage fire alarm system. In addition, a flow test was conducted on the existing 4-inch water line leading from the Panorama facility to an existing water supply reservoir as part of the park-wide *Fire Protection and Security Study* in 2002. The test concluded that the existing water pressure was not adequate to support fire suppression at Panorama (NPS, 2002a). The Panorama facility and associated water line are in need of upgrading to meet the requirements in the above-referenced policies.

In addition to inadequate fire protection and suppression systems, the existing Panorama facility is not in compliance with ADA. Bathrooms at the facility are located on the lower level, with no elevator available for access.

ENVIRONMENTAL CONSEQUENCES

This section describes the environmental consequences associated with the alternatives. It is organized by impact topics, which distill the issues and concerns into distinct topics for discussion analysis. These topics focus on the presentation of environmental consequences and allow a standardized comparison between alternatives based on the most relevant topics.

METHODOLOGY

NEPA requires consideration of context, intensity, and duration of impacts, direct or indirect impacts, cumulative impacts, and measures to mitigate for impacts. NPS policy also requires that "impairment" of resources be evaluated in all environmental documents.

Overall, the NPS based the following impact analyses and conclusions on the review of existing literature and Shenandoah National Park studies, information provided by experts within the park and other agencies, professional judgments and park staff insights, the Virginia state historic preservation office, and public input.

General Definitions

Potential impacts are described in terms of type (beneficial or adverse), context, duration, intensity, and impairment. The following general definitions were used to evaluate the context, intensity, duration, and cumulative nature of impacts associated with project alternatives. Impairment is discussed below. The specific criteria used to rate the intensity and duration of potential impacts for each resource topic are presented below.

Context of Impact

Context is the setting within which an impact is analyzed, such as local, park-wide, or regional. CEQ requires that impact analysis include discussions of context. Localized impacts are those that affect the resource area only on the project site or its immediate surroundings, and would not extend into the region. A park-wide impact would affect a resource area throughout the park, or in locations around the park.

Intensity of Impact

Impact intensity is the degree to which a resource would be beneficially or adversely affected by an action. Impact intensities are quantified as negligible, minor, moderate, or major. Resource-specific criteria used to rate the intensity of project impacts are presented below.

Duration of Impact

The duration of impact is analyzed independently for each resource because impact duration is dependent on the resource being analyzed. Depending on the resource, impacts may last as long as

construction takes place, or a single year or growing season, or longer. For purposes of analysis, impact duration is measured in short-term and long-term. Resource-specific criteria used to rate the anticipated duration of resource impacts are presented below.

Direct versus Indirect Impacts

Direct effects are impacts caused by the alternative(s) at the same time and in the same location as the action. Indirect effects are impacts caused by the alternative(s) that occur later in time or farther in distance than the action, but still reasonably foreseeable.

Resource-Specific Impact Definitions

Soils

All available information on soils potentially impacted in various areas of the park was compiled. Where possible, map locations of sensitive soils were compared with locations of proposed developments and modifications of existing facilities. Predictions about short- and long-term site impacts were based on previous projects with similar soils and recent studies.

The thresholds of change for the intensity of an impact on soils are defined as follows:

Negligible: Soils would not be affected or the effects on soils would be below or at the lower levels of detection. Any effects to soils would be slight.

Minor: The effects on soils would be detectable. Effects on soil area would be small. Mitigation may be needed to offset adverse effects and would be relatively simple to implement and likely be successful.

Moderate: The effect on soil would be readily apparent and result in a change to the soil character over a relatively wide area. Mitigation measures would be necessary to offset adverse effects and likely be successful.

Major: The effect on soil would be readily apparent and substantially change the character of the soils over a large area in and out of the Park. Mitigation measures to offset adverse effects would be needed, extensive, and their success could not be guaranteed.

The thresholds of change for the duration of an impact on soils are defined as follows:

Short-term: Recovers in less than three years.
Long-term: Takes more than three years to recover.

Visitor Use and Experience

NPS *Management Policies 2001* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of Shenandoah National Park is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

Public scoping input and observation of visitation patterns, combined with assessment of what is available to visitors under current management were used to estimate the effects of the actions in the various alternatives in this EA. The impact on the ability of the visitor to experience a full range of park resources was analyzed by examining resources and objectives presented in the park significance statement. The potential for change in visitor use and experience proposed by the alternatives was evaluated by identifying projected increases or decreases in interpretational or educational experiences and other visitor uses, and determining whether or how these projected changes would affect the desired visitor experience and to what degree and for how long.

The thresholds of change for the intensity of an impact on visitor use and experience are defined as follows:

Negligible: Changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.

Minor: Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.

Moderate: Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

The thresholds of change for the duration of an impact on visitor use and experience are defined as follows:

Short-term: Occurs only during the treatment action.
Long-term: Occurs after the treatment action.

Park Operations

Park operations, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure, and the ability to maintain the infrastructure, used in the operation of the park in order to adequately protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of the condition and usefulness of the facilities and developed features used to support the operations of the park. Facilities affected by this project include the Panorama facility, which is currently used as a restaurant, gift shop, concessionaire housing, and law enforcement staff offices; a water transmission line; the wastewater treatment facility; SAR/EMS and WFE storage facilities; and Headquarters Area staff offices.

The thresholds of change for the intensity of an impact on park operations are defined as follows:

Negligible: Park operations would not be affected, or the effects would be at low levels of detection and would not have an appreciable effect on park operations.

Minor: The effect would be detectable and would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful.

Moderate: The effects would be readily apparent and result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.

Major: The effects would be readily apparent, result in a substantial change in park operation in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, extensive, and success could not be guaranteed.

The thresholds of change for the duration of an impact on park operations are defined as follows:

Short-term: Effects lasting for the duration of the treatment action.
Long-term: Effects lasting longer than the duration of the treatment action.

Human Health and Safety

As stated in NPS *Management Policies 2001*, Section 8.2.5, *Visitor Safety and Emergency Response*, the saving of human life takes precedence over all other NPS management actions as the NPS strives to protect human life and provide for injury-free visits. While recognizing that there are limitations on its capability to eliminate all hazards, the NPS and its concessionaires, contractors, and cooperators will seek to provide a safe and healthful environment for visitors and employees. The NPS will strive to identify recognizable threats to the safety and health of persons and to the protection of property by applying nationally accepted codes, standards, engineering principles, and the guidance contained in Director's Orders #50, #58, and #83 and their associated reference manuals (NPS, 2000c).

To provide for the protection and safety of park visitors, the NPS will make reasonable efforts to search for lost persons, and to rescue sick, injured, or stranded persons. This responsibility may be fulfilled by NPS staff or by qualified SAR organizations that are capable of responding to life-threatening emergencies. The NPS will also make reasonable efforts to provide appropriate EMS for persons who become ill or injured. An EMS program will be maintained to provide transportation of the sick and injured and emergency pre-hospital care. The NPS will make a reasonable effort to provide a level of EMS commensurate with park needs, and in response to an emergency medical needs assessment (NPS, 2000c).

The objectives of the NPS law enforcement program are the (1) prevention of criminal activities through resource education, public safety efforts, and deterrence; and (2) detection/investigation of criminal activity and the apprehension and successful prosecution of criminal violators. In carrying out the program, the NPS will make reasonable efforts to provide for the protection, safety, and security of park visitors, employees, concessionaires, and public and private property, and to protect the natural and cultural resources entrusted to its care (NPS, 2000c).

The thresholds of change for the intensity of an impact on human health and safety are defined as follows:

Negligible: Human health and safety would not be affected, or the effects would be at the lowest levels of detection and would not have an appreciable effect on the human health or safety.

Minor: The effect would be detectable but would not have an appreciable effect on human health and safety. If mitigation were needed, it would be relatively simple and would likely be successful.

Moderate: The effects would be readily apparent and result in substantial, noticeable effects to human health and safety on a local scale. Mitigation measures would probably be necessary and would likely be successful.

Major: The effects would be readily apparent and result in substantial, noticeable effects to human health and safety on a regional scale. Extensive mitigation measures would be needed, and success would not be guaranteed.

The thresholds of change for the duration of an impact on human health and safety are defined as follows:

Short-term: Effects last one year or less.
Long-term: Effects last longer than one year.

Impairment of Park Resources

In addition to determining the environmental consequences of the preferred and other alternatives, NPS *Management Policies 2001* and DO-12 require analysis of potential effects to determine if actions would impair a park's resources.

The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS management discretion to allow certain impacts within parks, that discretion is limited by statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute an impairment. However, an impact would more likely constitute an impairment to the extent it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- Identified as a goal in the park's Master Plan or General Management Plan or other relevant NPS planning documents (NPS, 2000c).

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. In this section, a determination on impairment is made in the conclusion statement of each resource area for each alternative. The NPS does not analyze the potential for impairment of recreational values/visitor experience (unless impacts are resource based), socioeconomic values, or park operations.

Cumulative Impacts Scenario

CEQ regulations (40 CFR 1508.7) require the assessment of cumulative impacts in the decision-making process for Federal projects. A cumulative impact is an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-Federal), organization, or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts are considered for all alternatives and are presented at the end of each impact topic discussion analysis. To determine potential cumulative impacts, projects in the area surrounding proposed project site were identified. The area included the Shenandoah National Park and adjacent private and Federal lands. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on natural resources, cultural resources, visitor use, or the socioeconomic environment. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project. Known past, current, and reasonably foreseeable future projects and actions in the vicinity of the project site are described below.

Past Projects and Actions

Expanded Restroom Facilities at Dickey Ridge Visitor Center
(Completed; a Categorical Exclusion (CE) was signed by the Park Superintendent on July 12, 2000)

This project, completed in April 2002, consisted of the construction of an addition to the existing Dickey Ridge Visitor Center Comfort Station. This ADA-accessible addition replaced existing non-accessible restroom facilities within the visitor center. The expanded comfort station is 1,520 square feet with 16 fixtures, which represents an increase of 3 fixtures total. In addition, a fire detection/alarm system was installed in the comfort station to meet Life Safety Code. These improvements resulted in long-term, minor, localized, beneficial impacts on human health and safety and building compliance. Since the project involved a construction footprint on either manicured landscaped grounds (mowed lawn) or areas that had previously experienced construction, no short- or long-term impacts on natural resources occurred or are projected to occur (Olson, 2004). In addition, an archaeological survey conducted for this project concluded that no cultural resources were present in the project area. The Section 106 Case Report and SHPO both concurred that the project would have No Adverse Effect on cultural resources (Engle, 2004b).

Construction of the Cloverleaf, Entrance Station, and Panorama Building
(Completed; a CE for the Cloverleaf was signed by the Park Superintendent on July 21, 1998 and a CE for the Entrance Station was signed by the Park Superintendent on April 6, 2000; the Panorama building predates NEPA and NHPA)

Construction of the existing cloverleaf, entrance station, and Panorama building in the vicinity of the project site diminished the historic integrity of this section of Skyline Drive. According to the *Skyline Drive Historic District Nomination*, the cloverleaf at Panorama, the Thornton Gap entrance station, and the Panorama restaurant and parking are listed as non-contributory to the NRHP District since they long post-date the period of significance (NPS, 1997c). These construction activities were proceeded by construction of a Victorian Hotel and Tea Room and an overpass for U.S. 211. The construction of the extant interchange and buildings in the area removed both buildings and landscape that would, today, have been eligible for inclusion in the NRHP (Engle, 2004a). This project resulted in a long-term, moderate, adverse impact on Skyline Drive's cultural landscape in the vicinity of Panorama.

In addition to cultural resource impacts, construction of these buildings impacted natural resources through clearing of vegetation, soil disturbance, and increases in impervious surfaces

within the project area. In sum, short- and long-term, localized, minor impacts on natural resources, including soils, water resources, and vegetation/wildlife habitat, occurred as a result of this project. However, this project enhanced visitor use and experience at the park by providing an entrance way into the Park, as well as a gift shop for visitors, resulting in a long-term, minor to moderate, beneficial impact on visitor use and experience.

Present and Future Projects and Actions

Park Headquarters Area Fire Suppression Infrastructure
(Approved; On-going; a FONSI was signed by the Regional Director on August 8, 2003)

The purpose of the project is to provide enhanced fire suppression capabilities to buildings in the Headquarters Area of the Shenandoah National Park through an increased water supply and an improved water transmission system. This project includes the construction of a new 50,000-gallon water storage tank on the hillside above the park Headquarters Area, which is located on U.S. 211, 8 miles east of Luray. This new tank, roughly 20 feet in diameter and 20 feet high, will be placed adjacent to an existing, buried tank of roughly the same size. The new tank will likely be buried; if the necessary excavation were too costly, the new tank might be placed wholly or partially aboveground (NPS, 2003e).

An 8-inch water supply line will then be installed to provide the needed fire suppression water to the Administration Building. This line will be installed for about 1,200 feet along the shoulder of an existing paved NPS access road in an effort to minimize installation costs, facilitate maintenance, and produce the least possible environmental disturbance. Smaller water supply lines will also be installed from the existing water main to the fire cache, warehouse, and carpenter/sign shop. In addition, fire sprinkler systems will be installed in 3 buildings within the Maintenance Complex. This project is needed in order to bring the fire protection capability of the Headquarters Area in compliance with Life Safety Code® (NFPA 101®), *NPS Management Policies* 2001, NPS DO-58 (*Structural Fire Management*), and NPS Reference Manual #50B and DO-50B (*Occupational Safety and Health Program*) (NPS, 2003e).

While ground disturbance (vegetation removal and soil excavation) will occur as part of this project, impacts on natural resources (including soils, water, vegetation, and wildlife) would be short-term and minor, with the implementation of mitigation measures (NPS, 2003e; Olson, 2004). No long-term impacts on natural resources are anticipated. This project will have long-term, localized, moderate, beneficial impacts on human health and safety as a result of fire safety code compliance and the provision of an adequate water supply (NPS, 2003e).

An archaeological survey conducted for this project found known cultural resources within the proposed boundary of the project. The park submitted a Section 106 Case Report to the Virginia SHPO, and a concurrence was received on a finding of No Adverse Effect (Engle, 2004b). The project could have long-term, moderate, beneficial impacts on cultural resources, including historic structures, collections, and the cultural landscape, through the prevention of a potential catastrophic fire in the Headquarters Area.

New Comfort Station at Byrd Visitor Center
(Approved; On-going; a CE was signed by the Park Superintendent on February 8, 2000)

This project, which is nearly complete, consists of constructing a new comfort station at the Byrd Visitor Center. The comfort station will be approximately 2,000 square feet and located adjacent to the existing Byrd Visitor Center. A plaza area with covered walkway will connect the new building to the Visitor Center. The completion of the new restrooms will allow the existing, non-accessible restroom space to be converted into exhibit area. The area of construction is a previously disturbed area covered with lawn and concrete. Since this project involves a construction footprint on either manicured landscaped grounds (mowed lawn) or areas that have experienced previous construction, no natural resources are being impacted by this project (Olson, 2004). This project would make the visitor center compliant with ADA by providing for accessibility for disabled visitors. In addition, the provision of additional exhibit area space at the renovated facility would improve visitor experience there, resulting in a long-term, minor, localized, beneficial impact on visitor use and experience. This project will have no impact on cultural resources (Engle, 2004b).

Hogcamp Branch Stream Stabilization Project
(Approved; On-going; a FONSI was signed by the Regional Director on March 7, 2001)

The park is currently implementing a restoration plan aimed at stabilizing the 2 major headcuts within a 340-foot section of a heavily incised stream. This headcut stabilization will eliminate the upstream spread of erosion. Within this same stream section, the park would like to rebuild the channel and reduce sediment migration to downstream areas.

Headcut: Localized channel degradation in the form of an eroded drop-off and splashpool that occurs directly in the stream channel. It is usually caused by flooding and/or manipulation of the stream channel.

The park is installing sloping rock drop structures at the 2 major headcuts, as well as 6 to 8 loose-rock checkdams along the 340-foot affected reach. The sloping drop structures and checkdams will be constructed of native greenstone rock and quarry greenstone rock. The outer bank areas will be planted with native trees and shrubs. The areas below each sloping drop structure will be bolstered with native greenstone rocks/boulders. The base of both headcuts will be lined with geotextile filter fabric prior to installing the sloping drop structures (then layering with gravel, cobble, and lastly, rock). The checkdams will help to build up the stream channel and trap sediments.

Because the project involves the reconfiguration of a 340-foot long section of a stream, all stream resources have been impacted during implementation of this project, including water, substrate, aquatic biota, and upland areas along the stream banks. These impacts are anticipated to be temporary. The objective the project is stream restoration, with a net localized improvement in natural resource conditions (reduced erosion, reduced siltation) over the long-term (Olson, 2004). An archaeological survey conducted prior to the onset of work produced no evidence of cultural resources. In addition, a Section 106 Case Report documented a finding of No Adverse Effect on cultural resources (Engle, 2004b).

Interior Renovations and Exhibits at Byrd Visitor Center
(Approved; On-going; SHPO concurred with the finding of no adverse impact on June 20, 2000; no NEPA was conducted since the project is an interior renovation)

This project will fully rehabilitate the basement office space (2,157 square feet) at the Byrd Visitor Center. This includes a restroom, kitchenette, offices, work areas, a new secondary exit, and new heating, ventilation, air conditioning, and cooling (HVAC) equipment. The project will also construct a building addition (798 square feet) for an elevator and code compliant stairway, as well as a balcony extension to maintain the after-hours viewing area. The project will remove the existing restroom facilities and office space on the first floor and rehabilitate the area (2,157 square feet) into the Information Service Desk and sales area for the park's cooperating association. As part of the rehabilitation, a fire suppression system will be installed throughout the entire building (12,400 square feet). It is expected that the renovations will begin in 2004.

In addition, the park is planning to design, fabricate, and install exhibits in the Byrd Visitor Center. Exhibits would tell the park's significance and assist the visitor to experience the park with increased understanding and appreciation of its resources. This Visitor Center contains the only large exhibit area in the park and would, therefore, convey the primary park themes that are not interpreted elsewhere. Both artifacts and audio/visual components would be incorporated in the exhibitry. Exhibits would use current standards of interpretive media and devices and ADA standards for both physical and design accessibility.

Since this project involves interior renovations and construction only, no natural resources are being impacted by project implementation (Olson, 2004). This project would make the Byrd Visitor Center compliant with fire safety codes and the ADA, resulting in a long-term, minor, localized, beneficial impact on human health and safety and building compliance. Although temporary, minor, localized, adverse impacts on visitor use and experience may occur during renovation of the Byrd Visitor Center, provision of an Information Service area, as well as the new exhibitry described above, would result in long-term, moderate, beneficial impacts on visitor use and experience at the park. This project will have no effect on cultural resources (Engle, 2004b).

Simmons Gap Fire Suppression Infrastructure
(Approved; On-going; a CE was signed by the Park Superintendent on June 4, 2003)

This project is anticipated to be completed in 2004, and includes the installation of hydropnuematic tanks and sprinkler systems in four buildings at the Simmons Gap Administrative Area. The tanks and sprinkler systems will be stand-alone units that will have no impacts on the area's water system. Only minor interior impacts will be necessary to the structures to accommodate the sprinkler piping. Since the project involves interior installation of water tanks and sprinkler systems, no natural resources are being impacted by project implementation (Olson, 2004). This project will result in long-term, minor, localized, beneficial impacts on human health and safety and building compliance through fire safety code compliance. There will be no effect on cultural resources as a result of this project (Engle, 2004b).

Skyline Drive Rehabilitation
(In the Planning Phase; an EA and FONSI are anticipated)

This project would rehabilitate Skyline Drive and associated overlooks by milling and repaving the existing road surface. The work would include shoulder stabilization, striping, minor drainage work, and some reconstruction of stone walls, curbs, and asphalt walks at the overlooks. The work would occur from milepost 31.5 to approximately milepost 80 of Skyline Drive.

While most of the project would involve replacement of existing facilities, within the confines of existing footprints (roadway, overlooks, stone walls, curbs, and walkways), some impacts to natural resources may occur. These include removal of vegetation and soil, potential introduction of exotic plants, siltation in adjacent streams, and disturbance of wildlife. The majority of these adverse impacts would be short-term in duration, although some marginal vegetation and wildlife habitat may be lost alongside the roadway (Olson, 2004). Drainage improvements are expected to have long-term, minor, beneficial impacts on soils and water resources.

Skyline Drive is a National Register Historic District. All work in this project would have an effect on cultural resources. While most of the work would be replacement-in-kind, an archaeological investigation of one overlook is currently being implemented, and a Section 106 Case Report will be prepared for the project (Engle, 2004b).

Expansion of the Civilian Conservation Corps (CCC) Museum
(Potential future project; planning is just beginning)

As a separate, potential future project, the NPS would like to expand the CCC museum proposed for location inside the renovated Panorama facility. There are no specific plans or projects in place at this time for this expansion, and it is currently unknown whether such an expansion would occur. If this expansion were to occur, the only practical location for future development in the vicinity of Panorama is the area adjacent to the south and directly west of the parking area on the upper level (eastern parking area) (see **Figure 3**). Since this potential future expansion would occur on an area that is currently paved and disturbed, no new appreciable impacts on natural resources would be anticipated. Provision of this CCC museum would have long-term, minor to moderate, beneficial impacts on visitor use and experience. No adverse impacts on cultural resources would be anticipated, since this site is does not contribute to Skyline Drive's cultural landscape, and all exhibits provided at this new museum would be stored and exhibited in compliance with NPS museum standards for their protection.

ALTERNATIVE A: NO ACTION

Natural Resources

Soils

Under Alternative A, the Panorama facility would not be rehabilitated, and the water transmission line would not be replaced. There would be no new activities that would impact soils; however, existing impacts would continue. These impacts would include runoff from paved parking areas, and the associated potential for soil erosion adjacent to these areas, human use and pedestrian traffic at the project site, and the existing loss of soil surface from the existing Panorama building and parking areas. These impacts would be long-term, negligible to minor, adverse, and localized to the immediate vicinity of the Panorama building. The No Action alternative would neither contribute nor improve these conditions.

Cumulative Impacts

Past and present projects affecting soils have included the construction of the cloverleaf, entrance station, Panorama building, and park Headquarters Area fire suppression infrastructure, as well as the Hogcamp Branch stream restoration project. Future projects that would affect soils include the Skyline Drive rehabilitation project. Impacts on soils from these past, present, and future actions have included or would include short-term, localized, minor, adverse impacts on soils from construction soil disturbance and compaction; long-term, localized, minor, adverse impacts on soils from increases in impervious surfaces and subsequent minor increases in surface water runoff and erosion potential; a long-term, beneficial, minor to moderate, localized impact on soils from a reduction in soil erosion along Hogcamp Branch, and long-term, beneficial, minor, impacts on soils from improved drainage (and an associated reduction in soil erosion) along Skyline Drive. Existing and continued impacts on soils from the No Action alternative would be from the Panorama building, parking areas and roads, human use and pedestrian traffic at the site, and the water line presently buried in the utility corridor. These impacts would be long-term, localized, adverse, and negligible to minor. The cumulative effects of other projects and activities result in long-term, localized, minor, beneficial and adverse impacts on soils. The No Action alternative would have no cumulative contribution to these actions.

Conclusion

Alternative A would not result in any new direct, indirect, or cumulative impacts on soil resources. In addition, no impairment of the park's soil resources would occur under this alternative.

Visitor Use and Experience/Recreation

Under the No Action alternative, the Panorama facility would not be remodeled or expanded to provide for a new visitor center at the park. Existing visitor facilities at the park would continue

to operate and provide interpretive exhibits and programs for visitors. All visitor facilities would continue to operate seasonally, from April through October. There would be no new impacts on visitor use and experience/recreation under the No Action alternative. However, existing impacts would continue over the long-term, including the lack of a year-round visitor/education facility and closure of the Panorama gift shop. In addition, the No Action alternative would not create new impacts on visitor use and experience or recreation at the park. No new exhibit space would be provided in the Panorama building to display on special exhibit certain artifacts in the park's museum collections, such as those relating to the CCC, whose role in developing the park is a largely untold story. Overall, the No Action alternative would result in continued long-term, minor to moderate, adverse effects on visitor use and experience at the park. No new impacts on recreational opportunities, such as the Appalachian Trail, other trails, and Mary's Rock would occur.

Cumulative Impacts

Past and present projects affecting visitor use and experience have included the construction of the entrance station, Panorama building and gift shop, new comfort station at Byrd Visitor Center and associated new exhibit space, as well as interior renovations at Byrd Visitor Center. Future projects that would affect visitor use and experience include the potential development of a CCC museum at the Panorama site. Impacts on visitor use and experience from these past, present, and future actions have included or would include long-term, minor to moderate, beneficial impacts on visitor use and experience from improving and upgrading visitor facilities and creating new opportunities for visitor use. Existing and continued impacts on visitor use and experience from the No Action alternative would be from the lack of a year-round visitor facility, closure of the Panorama gift shop, and the lack of exhibit space for certain artifacts in the park's museum collections relating to the CCC. These impacts would be long-term, park-wide, adverse, and minor to moderate. The cumulative effects on visitor use and experience from other projects and activities, in conjunction with the No Action alternative, would be long-term, park-wide, minor to moderate, and beneficial, although the No Action alternative would not contribute beneficially to these impacts.

Conclusion

The No Action alternative would have no new direct or indirect effects on visitor use and experience or recreation at the Shenandoah National Park. However, this alternative would result in continued long-term, minor to moderate, adverse effects on visitor use and experience at the park. The cumulative effects on visitor use and experience from other projects and activities, in conjunction with the No Action alternative, would be long-term, park-wide, minor to moderate, and beneficial, although the No Action alternative would not contribute beneficially to these impacts.

Socioeconomic Environment, Including Park Operations

Park Operations

Under Alternative A (No Action), the Panorama facility would not be rehabilitated or remodeled as a visitor/education center, and the water transmission pipeline leading to the facility would not be replaced. However, the Shenandoah National Park would still take possession of the Panorama facility from ARAMARK on December 31, 2004. While the facility would no longer be used as a gift shop once ARAMARK vacates, ranger staff office space would still be provided in the facility.

Panorama Operations

Under Alternative A, the NPS law enforcement ranger staff would continue to work out of their current office space on the lower level of the Panorama building, and the remainder of the building would be closed to the public. As discussed in the *Affected Environment* section above, once the park takes possession of Panorama, the park will have to start paying for utilities to the building, building maintenance, and costs associated with running the wastewater treatment plant that serves the building. Under Alternative A, the park would incur these costs over the long-term, totaling approximately $246,000 a year (about $100,000 for building maintenance, $11,000 for electricity, and $135,000 for operating the wastewater treatment plant; costs include full time employee salary costs for operation and maintenance). Since the Panorama building would only be used for law enforcement ranger staff office space, the costs of operation and maintenance for the building would notably outweigh the benefits from building use over the long-term under Alternative A. Excessive park expenditures at the Panorama building under this scenario could take money away from other park operations, or could affect new projects at the park. The park would likely find it not worthwhile to continue operations at the building due to high costs, and could decide to relocate the ranger staff to a more cost-effective location (although this is not a definitive part of the No Action alternative). Impacts associated with operations at Panorama under Alternative A would be long-term, localized (with the potential to be park-wide if other park projects or operations are affected), and minor to moderate in intensity.

Building Compliance

Since no improvements to or rehabilitation of the Panorama building are scheduled for the foreseeable future, the building would remain non-compliant with the ADA over the long-term under Alternative A. NPS *Management Policies 2001*, *Guiding Principles of Sustainable Design*, and various NPS Director's Orders (including DO #42, *Accessibility for Visitors with Disabilities*), in part, require the NPS to conserve energy through sustainable design and to design, construct, and operate all buildings, and modify existing facilities, where possible, so that they are accessible to, and usable by, persons with disabilities to the greatest reasonable extent. The No Action alternative would not work toward meeting these requirements.

In addition, the water transmission line serving the Panorama building would not be replaced with a larger-diameter line under the No Action alternative, and no interior upgrades to fire

suppression infrastructure would be made. Existing fire suppression infrastructure in the Panorama building and serving the building would continue to be inadequate for fire suppression. This infrastructure would continue to be in violation of the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*, since no improvements to this infrastructure are scheduled for the foreseeable future. These violations would represent a long-term, localized, minor to moderate, adverse impact on utilities and infrastructure.

Park Functions and Services

SAR/EMS vehicles, emergency response equipment, and firefighting equipment would continue to be stored at Piney River and the WFE would continue to be stored in the Headquarters Area under the No Action alternative, while law enforcement ranger staff would continue to operate from Panorama. Law enforcement ranger emergency services would continue to be inefficient, and emergency response times too high (typically 15 to 30 minutes greater for incidents requiring larger or specialized equipment), risking visitor safety, due to the physical separation between workers and response vehicles. Emergency vehicles and equipment are currently not centrally located near park resources, and coordination is difficult, making these services less efficient and risking visitor safety. These problems would continue under the No Action alternative, resulting in a long-term, moderate, adverse impact on park operations. These adverse effects would extend to primarily to the North District, although they could extend further if District rangers are called on to help respond to incidents on other districts of the park. Due to inefficiency and unreliability, the park may not be able to continue their function as first responder in emergency and fire situations.

Continued physical separation of ranger staff and equipment would also continue to adversely affect park functions and services during non-emergency times under Alternative A. Since the ranger staff does not have equipment maintenance space near their offices at Panorama, the staff has to leave their offices and other duties in order to perform routine maintenance and restocking of equipment and vehicles, as well as to perform training activities for the use of the equipment. This can interrupt other ranger staff assigned duties from both increased travel time and being away from their office space/telephones. In addition, since road conditions may be too severe for responding units to access Piney River during the winter, prior to the onset of winter, the NPS has to relocate important major rescue equipment from Piney River to the Headquarters Area for easier access. However, because are no suitable storage bays/facilities in the Headquarters Area, the NPS is forced to store the equipment outside, where it is exposed to the elements. This exposure causes vehicle batteries to drain and die and fluids in the equipment to freeze up, requiring extra maintenance and upkeep efforts (Freeland, 2004). These non-emergency situational effects on park functions and services under the No Action alternative would be long-term, minor to moderate, and adverse, and would extend to the region served by the District ranger staff.

If the No Action alternative were to be implemented, no relocation of personnel from the park Headquarters Area would occur, and trailers currently used as office space in the Headquarters Area would not be able to be eliminated. These trailers would continue to be substandard office

space for those employees working within them, and would continue to cost the park additional money to keep and maintain the rented trailers. This would represent a long-term, minor, adverse impact on park operations and costs. However, work occurring within the trailers would remain unimpeded under Alternative A.

Human Health and Safety

Long-term, moderate, adverse impacts on human health and safety would result from Alternative A. Under the No Action alternative, the Panorama facility would not be remodeled or upgraded, and no consolidation of park operations would occur. EMS, SAR, and WFE vehicles and equipment would continue to be located at Piney River and the Headquarters Area (in the case of the WFE), and the staff that operates them would continue to work out of Panorama. District ranger services would continue to operate inefficiently and ineffectively in the event of an emergency. Response time would continue to be protracted (by 15 to 30 minutes or more, depending on the location and severity of the incident), and would continue to pose risks to human health and safety. In addition, in the event of a wildland fire, delayed response time could allow the fire to become out of control, posing additional risks to life and property.

Since there are currently no scheduled upgrades or improvements to the Panorama facility, the building would remain non-compliant with the ADA under Alternative A. In addition, the fire suppression infrastructure at Panorama would not be upgraded, and would continue to be inadequate for fire suppression. This infrastructure would continue to be in violation of the Life Safety Code® (NFPA 101®), which requires fire suppression in some buildings in the area, and NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and NPS Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*, which requires it in others for the protection of employees and property (structures and equipment). Since the building would not be open to visitation, no impacts on visitor safety would be anticipated. However, violation of these codes and policies would represent a long-term, localized, moderate, adverse impact on employee health and safety.

NPS Reference Manual #50B and DO-50B states that it is the policy of the NPS:

> "…to provide for a safe and healthful place of employment, and to protect Federal and private property from accidental damage or loss associated with National Park Service operations….The National Park Service will: promote and enforce safe work practices and integrate safety and health into every operation and activity;…meet or exceed all applicable statutory, regulatory, and policy requirements relating to safety, health and the environment;…identify recognizable threats to employee safety and health and to the protection of property by applying national accepted codes, standards, engineering principles;…inspect every NPS workplace…and correct deficiencies in priority order to meet all applicable standards…"

Alternative A would not be in compliance with NPS policies for protecting the safety and health of its employees, contractors, volunteers, and partnerships. This alternative would not work to remove the existing safety hazards identified at Panorama, would not work to provide a safe and healthful place of employment, and would not work to remove the potential for loss of life and property in the event of a fire.

Alternative A would continue to pose threats to human health and safety over the long-term. NPS ranger staff would continue to be the first responder to a fire emergency, and would continue to make employee egress the first priority. However, depending on the severity of the fire and location of the fire within the building, there is the potential that an employee(s) could become trapped within the burning building, and dependent on local fire department or rescue personnel to rescue them. Without adequate fire suppression infrastructure in place, the fire would continue to worsen while trapped employees wait for local services to arrive. The potential for this situation to occur would be low, and would be a long-term, minor to moderate, adverse impact on human health and safety.

Cumulative Impacts

The NPS has undertaken or is currently undertaking several projects around the Shenandoah National Park to improve fire suppression infrastructure, legal compliance, and sustainability in several of the park's buildings. These projects include expanded restroom facilities at Dickey Ridge Visitor Center, park Headquarters Area and Simmons Gap fire suppression infrastructure improvements, and construction of a new comfort station and interior improvements at Byrd Visitor Center. All of these projects are designed to improve park operations and increase the safety of the park's visitors and employees, and have resulted or are resulting in long-term, moderate, park-wide, beneficial impacts on human health and safety and building compliance. While the No Action alternative would not work towards these same goals, and would result in continued inefficient and ineffective operations and threats to public and worker safety, since these other projects are improving operations and safety conditions in the park, implementation of Alternative A would not contribute appreciably to cumulative impacts on human health and safety or building compliance.

Conclusion

Alternative A would result in long-term, localized (with the potential to be park-wide if other park projects or operations are affected), minor to moderate, adverse impacts on park operations from operation and maintenance costs and efforts associated with operating the Panorama building as limited office space. Panorama and its associated infrastructure would remain non-compliant with several laws and regulations for the protection of human health and safety over the long-term, resulting in localized, minor to moderate, adverse impacts on utilities, infrastructure, and human health and safety. Long-term, park-wide, moderate, adverse impacts on park operations and human health and safety would result from continued separation of District law enforcement personnel and emergency response equipment and from continued high emergency response times in the event of accidents or wildland fires. No residential units in the Headquarters Area would be converted back to their intended purposes under Alternative A, resulting in a long-term, minor, adverse impact on park functions.

ALTERNATIVE B: PROPOSED ACTION

Natural Resources

Soils

Construction activities associated with the rehabilitation of and addition to the Panorama building and replacement of the facility's water transmission lines would result in short-term, negligible to minor, localized adverse effects on soils due to soil disturbance, compaction, and the removal of vegetation. Construction would also result in a long-term, negligible impact on soils from soil surface loss associated with the building expansion footprint. This impact is discussed at the end of this section.

Soil disturbance during construction would occur from vegetative clearing, grading, and excavation activities. Construction disturbance (the construction zone), aside from that associated with the new building addition, would not exceed 10 feet from any exterior wall of the building (NPS, 2003a), and may require removal of a few trees and shrubs from the project site. Since the new building addition would approach a moderately steep hillside, the estimated fill required to support the adjacent walk and safe round-off would be approximately 260 cubic yards. Unsuitable soils from foundation excavation would be removed from the site; all other excavated soils would be used to obtain necessary fill requirements to the west of the new addition (NPS, 2003a).

The installation of approximately 3,000 linear feet of new 8-inch diameter water line from the existing supply reservoir to Panorama would require additional ground disturbance. The proposed route of the new water line would follow the old 4-inch line trench, where practical to reduce potential rock excavation associated with a new trench. Soils excavated during pipeline replacement would be temporarily stockpiled for use as backfill for the excavated trench. In addition, as part of pipe installation, the existing right-of-way corridor would be enlarged by approximately 10 feet by vegetative clearing, to provide a corridor with a maximum width of 20 feet for construction (plus an additional 3 feet for trench excavation). The existing right-of-way corridor was originally 20 feet wide, but has grown back to approximately 10 feet wide due to lack of maintenance of the corridor width.

The amount of short-term soil disturbance/exposure (areas that would be revegetated or allowed to revegetate naturally following construction) that would occur as a result of the Proposed Action would be about 69,282 square feet (about 1.6 acres), calculated as follows:

> <u>At the Panorama Building</u>:
> Assuming that about 10 percent of the total area of the 2-story Panorama building addition would be the construction zone for this addition:
> 2,820 square feet x 0.10 = 282 square feet of short-term soil disturbance

For the Water Line Replacement:
Length of water line to be replaced (3,000 feet) x width of the construction corridor (10 feet + 10 feet + 3-foot-wide trench = 23 feet) = 69,000 square feet

Total Short-term Soil Disturbance:
69,000 square feet + 282 square feet = 69,282 square feet

Exposed soils, including soils stockpiled during construction, are vulnerable to erosion during rainfall, and especially so during intense storms. During rainfall, exposed soils lose surface soil particles from raindrop impact, and these particles become suspended in surface water runoff. The Panorama building is located on a hill. The sloped nature of this site may result in an increase in surface water runoff velocity, resulting in a greater potential for soil erosion and sedimentation. Runoff from areas disturbed during construction would have the potential to contribute sediment to the intermittent/ephemeral stream in close proximity to the Panorama facility, as described under *Impact Topics Dismissed From Further Consideration*, *Water Resources*, above.

Increased surface water runoff and soil erosion could also result from the removal of vegetation during construction. Vegetation provides erosion control by increasing infiltration and providing soil stabilization. Few, if any, scattered trees and shrubs would be removed in the vicinity of the Panorama building, and any resultant impact on soils would not be measurable, particularly with the implementation of mitigation measures as described in **Table 4** above. A greater amount of vegetation would be removed along the water line corridor to widen the corridor to 20 feet for construction. While this would increase the potential for soil erosion in these areas over the short-term, erosion control measures, as described in **Table 4**, and planted vegetation would help to stabilize the soils against long-term erosion. Long-term impacts on soils from vegetation removal would be negligible to minor. Over the long-term, the maintained width of this corridor would be 12 feet (minimum) to 20 feet (maximum), depending on location, and all exposed soils would be seeded with native plant species, mulched, and allowed to revegetate upon completion of construction.

Soil compaction can occur from the use of heavy equipment during construction activities. Compaction increases the impermeability of the soil, which could contribute to short-term, increased surface water runoff from the project site, and subsequent increases in erosion and sedimentation. Soil compaction can also impede root growth, inhibiting revegetation. Construction equipment would be staged on the paved parking area at the Panorama facility, which would largely eliminate the potential for soil compaction as a result of equipment storage. However, there would still be the potential for soil compaction at the construction site from the use of heavy equipment. To minimize the potential for compaction in the project area, construction would not be conducted when soils are saturated, such as during or immediately following rain events.

As part of project implementation, the NPS and construction contractor would be required to comply with the *Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations* (VESCL&R), codified at Title 10.1, Chapter 5, Article 4 of the Code of Virginia, *Virginia State Water Control Law*, and the *General Virginia Pollutant Discharge Elimination*

System (VPDES) Permit Regulation for Discharges of Storm Water from Construction Activities to avoid and minimize erosion at the construction sites and sediment runoff to the intermittent stream within the project area during all construction activities under Alternative B.

The Virginia Department of Conservation and Recreation (VDCR) implements the State's Erosion and Sediment Control (ESC) Program according to the VESCL&R. The ESC Program controls soil erosion, sedimentation, and nonagricultural runoff from regulated "land-disturbing activities" to prevent degradation of property and natural resources. Under the program, a "land-disturbing activity" is defined as "*any land change on private or public land that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land*." This definition includes land-disturbing activities equal to or exceeding 10,000 square feet, which includes the Preferred Alternative. As part of compliance with the VESCL&R, the NPS and construction contractor would develop and submit to the VDCR for approval, an ESC plan to implement during construction, and would follow (at a minimum) the VESCL&R Minimum Standards (4 Virginia Annotated Code (VAC) 50-30-40) and the guidance provided in the *Virginia Erosion and Sediment Control Handbook* published by the VDCR (VDCR, 2001). Adherence to the approved ESC plan and Virginia erosion control guidance would minimize any impacts on soils associated with erosion during construction to a negligible level.

As part of the VESCL&R Minimum Standards, any stockpiled during construction would be stabilized or protected with sediment trapping measures, such as silt fences and straw bale barriers. In addition, if disturbed areas, including stockpiled soils, are to remain dormant for longer than 30 days during construction, temporary soil stabilization measures would be applied to those areas within 7 days of disturbance. During underground utility line installation, no more than 500 linear feet of trench may be opened at any one time during construction to minimize erosion potential from the site, and any excavated material would be placed on the uphill side of the trench (VDCR, 2001). Implementation of these measures would reduce the potential for adverse effects on soils during construction activities.

All disturbed areas would be backfilled and compacted (if necessary), and graded and seeded with native vegetation to stabilize and avoid long-term impacts on soils. In accordance with the VESCL&R Minimum Standards, all material used for backfilling would be properly compacted to minimize erosion and promote soil stabilization. Permanent soil stabilization would be applied to disturbed areas within seven days after final grade is reached on any portion of the construction site (VDCR, 2001). Land grading helps to control surface water runoff, soil erosion, and sedimentation by providing a flatter surface for construction, thus decreasing the velocity of potential surface water runoff. Land grading also provides long-term stabilization of slopes and soils, minimizing soil loss (NRCS, 1994).

Construction of the 2,820-square-foot addition to the Panorama building would result in the permanent replacement of a very small amount of soils with an impermeable surface (equal to the 2,820 square-foot footprint of the addition). An increase in the amount of impervious surface would increase the quantity and velocity of storm water runoff, which would increase the susceptibility of surrounding soils to erosion. However, given the very small area that would be

converted to an impervious surface, these impacts on soils are anticipated to be negligible in intensity.

Cumulative Impacts

Past and present projects affecting soils have included the construction of the cloverleaf, entrance station, Panorama building, and park Headquarters Area fire suppression infrastructure, as well as the Hogcamp Branch stream restoration project. Future projects that would affect soils include the Skyline Drive rehabilitation project. Impacts on soils from these past, present, and future actions have included or would include short-term, localized, minor, adverse impacts on soils from construction soil disturbance and compaction; long-term, localized, minor, adverse impacts on soils from increases in impervious surfaces and subsequent minor increases in surface water runoff and erosion potential; a long-term, beneficial, minor to moderate, localized impact on soils from a reduction in soil erosion along Hogcamp Branch, and long-term, beneficial, minor, impacts on soils from improved drainage (and an associated reduction in soil erosion) along Skyline Drive. The potential future construction of the CCC museum at the Panorama site would not appreciably impact soils, since construction would occur on a currently paved area.

Although there would be short-term impacts on soils as a result of construction and vegetation removal under the Preferred Alternative, these impacts would be negligible to minor in intensity and localized to the construction area. Long-term impacts on soils under the Preferred Alternative would also be negligible and localized, and would be associated with a slight increase in impervious surface in the project area due to expansion of the Panorama building. In conjunction with the soils impacts from other activities that have occurred, are occurring, or are projected to occur in the area, short-term cumulative impacts from the Preferred Alternative would be negligible to minor, localized, and adverse. The park minimizes adverse impacts on natural resources during all construction activities with implementation of BMPs and compliance with Virginia sediment and erosion control laws and regulations. Long-term cumulative impacts on soils from the Preferred Alternative, in conjunction with other activities, would be minor, localized, and adverse, and would be associated with a cumulative increase in impervious surfaces and soil loss in the project area.

Conclusion

Construction activities under Alternative B would have temporary to short-term, negligible, localized impacts on soils due to increased erosion, compaction, and runoff from the construction site. Long-term, negligible to minor, adverse impacts on soils would occur under the Preferred Alternative from vegetation removal along the water line corridor, and from construction of the building addition due to a permanent loss of a very small amount of soils and an increase in impervious surfaces. The Preferred Alternative would contribute to short-term, adverse, negligible to minor, localized, and long-term, minor, localized, adverse cumulative impacts on soils. This alternative would not result in the impairment of any natural resources.

Visitor Use and Experience/Recreation

Construction activities associated with rehabilitating the Panorama building and replacing the underground water line under Alternative B may have short-term, adverse effects on recreation along the Appalachian Trail and other nearby hiking trails due to the presence of workers and equipment, noise generated from equipment and vehicles, and increased construction truck and traffic and associated delays. Construction activities would require the use of equipment that generates noise, which could temporarily interfere with or decrease the enjoyment of some recreational uses. There are many other areas open to hiking on the park that visitors could use during the Panorama construction period. Short-term effects experienced by recreational users in the areas as a result of construction activities would be negligible, at most.

During construction, the Panorama building would be closed to public visitation. This short-term closure would have negligible to no impact on recreation or visitor use in the area, since ARAMARK's gift shop would already have been closed. While the building itself would be closed to public visitation, the upper (eastern) parking area would remain open to visitors wanting to access the Appalachian Trail and Molly's Rock. The construction contractor would provide an open pathway from this parking area to the Trail access point along the stone retaining wall behind the Panorama building to allow for continued visitor access. The NPS would require the construction contractor to erect orange fencing around the equipment staging area, separating the exposed equipment from the provided pathway to the Trail access point. Safety signs would also be erected around the construction site to warn visitors of the dangers at the site.

To protect the extensive area of special flagstone walk adjacent to the south side of the Panorama building during construction, the new water line route would deviate from the existing alignment as necessary to bypass this area. The proposed alignment is in the upper (eastern) parking lot pavement outside the walk (NPS, 2003a).

Long-term, moderate, beneficial impacts on visitor use and experience/recreation would occur as a result of the Preferred Alternative. The new visitor/education center would provide visitor orientation/information areas with interpretive exhibits and book sales, a CCC museum, and multi-purpose room for an orientation film/meeting space for school groups for use during inclement weather. Approximately 1,000 square feet of museum space would interpret the currently untold, CCC story at Shenandoah National Park. This museum exhibit would be artifact-rich and tell the primary park theme about the CCC and the early development of the park infrastructure. Orientation area exhibits would include a large central topographic map and an existing computer interactive Wilderness touch-screen CD. The orientation and sales areas would be partially intermixed. The Air Quality Discovery Station would also be located in this area. This exhibit would be provocative and designed to motivate critical thinking and creative problem solving among its viewers. As an orientation center, Panorama would provide information on hiking, backcountry camping, and other activities and amenities in the park. The interpretive goal is for the visitor to leave the center excited about his/her opportunities to experience the park. Exhibits would be family-friendly and appeal to a wide range of learning styles (NPS, 2003b).

The proposed Panorama Visitor/Education Center would be located at the second busiest entrance to the park, and would greatly benefit visitor use and experience by increasing knowledge and enjoyment of park opportunities, as well as increasing the understanding and appreciation of park resources. Alternative B would provide increased service to the general public who need to have orientation and resource stewardship messages when they arrive at the park. Visitors entering the park at Thornton Gap would no longer be forced to drive about a half-hour before reaching a visitor information center. The location of the Panorama facility almost at the midpoint between the Dickey Ridge Visitor Center to the north and Byrd Visitor Center to the south would make a visitor's trip much more convenient than existing conditions. In addition, should other park visitor centers become overcrowded during peak seasons, the new Panorama facility would provide spillover relief, at a much shorter distance than exists currently.

The new Panorama Visitor/Education Center would be the only visitor information and learning facility open year-round at the Shenandoah National Park. Year-round operation of the new center would greatly benefit school groups. Currently, all visitor information and learning facilities at the park are closed during the majority of the school year (October through April). Providing a year-round facility would allow for many additional school trips to occur, providing a new educational experience for many students.

The NPS anticipates that approximately 300,000 visitors would visit the new Panorama Visitor/ Education Center annually. Although it is not possible to determine at this time exactly how many of these would be "new" visitors to the park, it is likely that some would be new and others would be repeat visitors from other park facilities. Of the total estimated visitation, the NPS anticipates that 50,000 visitors would visit the facility during the winter. Since no other park facilities are open during winter months (partly due to closure of Skyline Drive), all 50,000 of these winter visitors would be "new" visitors.

Visitor experience would also be enhanced under Alternative B by consolidation of park operations at the centrally located Panorama facility. As described in detail under *Socioeconomic Environment, Including Park Operations* below, visitor safety would be enhanced through more efficient and effective emergency response times in this region of the park.

Cumulative Impacts

Past and present projects affecting visitor use and experience have included the construction of the entrance station, Panorama building and gift shop, new comfort station at Byrd Visitor Center and associated new exhibit space, as well as interior renovations at Byrd Visitor Center. Future projects that would affect visitor use and experience include the potential development of a CCC museum at the Panorama site. Impacts on visitor use and experience from these past, present, and future actions have included or would include long-term, minor to moderate, beneficial impacts on visitor use and experience from improving and upgrading visitor facilities, creating new opportunities for visitor use (including new and improved exhibit areas), and improving safety conditions in may visitor areas.

Implementation of the Preferred Alternative would be keeping with this direction of enhancing visitor experience and safety at the park. Long-term, moderate, beneficial impacts on visitor use and experience/recreation would occur as a result of the Preferred Alternative. Together with the improvements proposed for the Dickey Ridge and Byrd visitor centers along Skyline Drive, as well as other projects described above, the Preferred Alternative would contribute to a net beneficial impact on visitor use and experience. This beneficial impact would be long-term, park-wide, and moderate in intensity.

Conclusion

Short-term, localized, negligible impacts on visitor use and experience/recreation would be expected during construction due to the presence of workers and equipment, noise generated from equipment and vehicles, and increased construction truck and traffic and associated delays. However, over the long-term, moderate, beneficial impacts on visitor use and experience/ recreation would occur due to year-round operation of the Center, the building's central location, benefits to visitor safety, and the provision of informational and interpretive services. Long-term, moderate, beneficial impacts to school groups would also likely occur due to the facility being open throughout the school year. Visitation in this region of the park would likely increase, particularly so during winter months. The Preferred Alternative would contribute to long-term, park-wide, moderate, beneficial, cumulative impacts on visitor use and experience.

Socioeconomic Environment, Including Park Operations

Park Operations

Panorama Operations

Construction activities would not affect park operations. Prior to the onset of construction, the law enforcement ranger staff currently operating at the Panorama building would be temporarily relocated to other existing facilities to ensure their continued function during the construction period. No new facilities would be created to house these workers.

Over the long-term, offices and workspace would be provided on the lower floor of the renovated Panorama building for interpretive staff, education staff, a fee management supervisor, the backcountry/wilderness coordinator, and law enforcement rangers. Office and book storage space for the SNPA and a multipurpose room for public programs and staff training with table workspace and audio/visual (A/V) capabilities would also be provided on the lower level. An approximately 900-square-foot 2-bay vehicle storage facility would be included as part of the Panorama building addition for the District's SAR/EMS vehicle and WFE storage (NPS, 2003a; 2003b; 2002b). The existing contact station in the upper (eastern) parking area that currently serves as the backcountry permitting station would be rehabilitated into a vending area and yard equipment storage area.

The new Panorama Visitor/Education Center would become the park's first year-round visitor facility, and would be a free facility. A minimum of 18 and a maximum of 25 people would

work at the rehabilitated Panorama facility, once open. Of these, approximately 5 would be new NPS full-time staff (Herzog, 2003b), and would be classified as Visitor Use Assistants. In addition, 1 full-time sales clerk and 1 part-time sales clerk (seasonal—spring through fall) would be hired by the SNPA to assist in their operations at the facility. Overall, creation of employment at Panorama would have a long-term, localized, negligible to minor, beneficial impact on park operations.

The costs of operating and maintaining the rehabilitated Panorama building under Alternative B would be higher than those anticipated under Alternative A. The NPS estimates that approximately $458,000 per year would be needed to operate the new facility (Herzog, 2003a). This cost includes salaries for the staff running daily operations at the facility, as well as general operating costs, such as utilities and maintenance. In addition to this amount, the NPS would still incur the costs associated with operating the wastewater treatment plant under Alternative B. This cost would be similar to the cost projected for Alternative A (about $135,000 per year). While operation and maintenance costs are much higher under Alternative B than under Alternative A, the NPS has requested an increase in the park's budget to cover these, and anticipates the increase will be received (Herzog, 2003a). Therefore, impacts associated with operation and maintenance of the renovated Panorama facility are expected to be negligible.

In addition to the budget increase requested by the NPS, the NPS would receive additional franchise payments from SNPA under Alternative B. The SNPA estimates it would generate an additional $350,000 in new annual income from operating a book sales area year-round in the renovated Panorama building under Alternative B. SNPA currently gives 15 percent of its gross annual revenues to the NPS. Assuming $350,000 in new income from operations at Panorama, the NPS would receive an additional $52,000 from SNPA as a result of Panorama operations. This would be a beneficial, although minor, long-term impact on park operations and budget. This increase would also help offset any new costs incurred by the NPS for operations at Panorama.

Building Compliance

NPS *Management Policies 2001*, *Guiding Principles of Sustainable Design*, and NPS DO-42, *Accessibility for Visitors with Disabilities*, require the NPS to reuse existing structures and disturbed sites instead of new construction, wherever and whenever feasible; to conserve energy through sustainable design; and to design, construct, and operate all buildings, and modify existing facilities, where possible, so that they are accessible to, and usable by, persons with disabilities to the greatest reasonable extent. Rehabilitation of Panorama under Alternative B would reuse and existing building in a previously disturbed area, and would include installation of an elevator from the restrooms on the lower level and a stairway addition to meet ADA compliance. Work would also include all necessary utilities, exterior repairs, and the installation of energy efficient windows to help meet sustainability requirements. Therefore, the renovated Panorama facility under the Preferred Alternative would be in compliance with the ADA, NPS *Guiding Principles of Sustainable Design*, and NPS DO-42, *Accessibility for Visitors with Disabilities* over the long-term.

The water transmission line serving the Panorama building would be replaced under Alternative B with a larger-diameter, higher-pressure line, and a sprinkler system would be installed in the building. These improvements would bring Panorama in compliance with the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and NPS Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*. Obtaining compliance with these laws and regulations would represent a long-term, localized, minor to moderate, beneficial impact on utilities and infrastructure.

Park Functions and Services

Over the long-term, moderate, beneficial impacts on park operations would result from Alternative B. Relocating SAR/EMS and wildland fire vehicles and equipment to Panorama would greatly decrease law enforcement ranger response time for emergency incidents due to consolidation of staff and response equipment. Response times would be reduced by 15 to 30 minutes or more under this alternative. These beneficial impacts would extend to the entire park District, since these emergency response services are District-wide. The Preferred Alternative would increase the efficiency and effectiveness of park operations by combining many park functions into a single centrally located building accessible by both Skyline Drive and a State-maintained highway. Consolidation of staff and equipment would provide more efficient and effective law enforcement and emergency response services in the event of a vehicular accident or some other accident on the District. As a result, the NPS would be able to retain their responsibility as first responder in the event of an emergency under Alternative B.

In addition, consolidating staff and equipment under the Preferred Alternative would also benefit park functions and services during non-emergency times. This alternative would provide NPS ranger staff with a space to conduct routine equipment maintenance and restocking activities, as well as equipment training, that is located in the same building as their office space. This would eliminate the unnecessary travel time staff currently have to undergo in order to work with this equipment and would reduce other potential interruptions to their assigned duties over the long-term by being located next to their offices. In addition, the provision of storage bays would eliminate exposure of vehicles and equipment to harsh winter conditions, reducing the potential for unnecessary and frequent equipment repairs during winter months. Overall, these non-emergency situational effects on park functions and services under the Preferred Alternative would be long-term, minor to moderate, and beneficial, and would extend to the region served by the District ranger staff.

When existing park and SNPA staff are relocated to the Panorama facility from the Headquarters Area, two rented office trailers would be able to be eliminated from the housing area, which would reduce costs to the park over the long-term. The housing units being vacated by staff relocating to Panorama would be used by the staff currently working within the rented trailers or other substandard office space. Elimination of these trailers and associated reduction in costs to the park would have a long-term, minor, localized, beneficial impact on park operations and costs.

Human Health and Safety

During construction activities under Alternative B, various safety measures would be in place to protect the public and workers from dangers at the construction site, and to restrict access to the site. Prior to construction, staff currently working at Panorama would be relocated to existing facilities, where they would remain until construction has been completed. While the Panorama facility would be closed to public visitation during construction, the upper (eastern) parking area would remain open to visitors wanting to access the Appalachian Trail and Molly's Rock. The construction contractor would provide an open pathway from this parking area to the Trail access point along the stone retaining wall behind the Panorama building to allow for continued visitor access.

Barricades or fences would be installed around the construction site to prevent non-contractors and the public from entering the construction areas. The NPS would require the construction contractor to erect orange fencing around the equipment staging area (lower/western parking area), separating exposed equipment from the provided pathway to the Trail access point. These barricades would be regularly maintained and would be illuminated at night (NPS, 1997a). The construction contractor would also be required to post construction warning signs to notify employees and the public of the construction site and dangers at the sites. All required signage per the *Manual on Uniform Traffic Control Devices* (USDOT, 2001) would be installed and maintained around the construction site and along U.S. 211 and Skyline Drive in the vicinity of the construction site (NPS, 1997a).

To protect the public and employees from dangers associated with the replacement of the water line, all open trenches would be closely monitored during construction. Any excavated trenches would be refilled with excavated soil immediately following the placement of the pipe in the trench. No trenches would be left exposed overnight; excavated trenches would be required to be refilled by the close of work for the day.

Signs would be installed around the construction zone along U.S. 211 and Skyline Drive to notify motorists to slow down and that there are men working. When construction activities are occurring, or when equipment is being used, immediately adjacent to the travel surface, the lane adjacent to the construction zone would be closed to traffic, and traffic would be diverted around the construction zone into the one free lane with the use of flaggers. Closing the adjacent lane would provide a safety buffer between the construction zone and motorists. With all of these measures in place, the potential to pose safety risks to the public during construction activities would be very low.

Other construction safety standards and requirements would be built into the construction contract for the project. The NPS has a set of construction contract standards, which contractors for NPS projects must follow during construction. As part of these specifications, the contractor is required to designate and post a hard hat area. All workers or visitors to the construction site are required to wear hard hats, in addition to any other necessary protective equipment, at all times. At least six hard hats are required to be stored on-site for use by visitors (NPS, 2000a).

The NPS construction contract specifications also include additional worker safety requirements. An accident prevention program would be established before work begins to ensure worker and visitor safety. Among other things, the program must include: the name of the supervisor responsible for carrying out the program; a list of weekly and monthly safety meetings; first aid procedures; an outline of each phase of work, with hazards associated with each phase and the methods of ensuring safety; training in first aid and hazardous materials handling; planning for possible emergency situations (such as floods or fires); and fire protection. The program must be reviewed by the NPS contracting officer for compliance with Occupational Safety and Health Administration (OSHA) requirements. In addition, all mechanical equipment present on the construction site must be OSHA-inspected (NPS, 2000a).

Personal protective equipment would be available on-site, and would be inspected daily for maintenance. Adequate first aid facilities would be provided on the construction site in the event of an accident. Emergency phone numbers, including ambulance, hospital, police, and fire department numbers, would be posted at the work site with reporting requirements (NPS, 2000a). With all of these safety measures in place, impacts to worker safety resulting from construction activities would be temporary and negligible.

Fuel products (petroleum, oils, and lubricants) would be needed to operate some of the heavier equipment used during construction activities. As with almost any construction project involving the use of heavy equipment, there is some risk of an accidental fuel product or chemical spill or unplanned release of some other toxic or hazardous contaminant, which could adversely affect human health and safety and natural resources. All employees that would be exposed to hazardous materials at the construction site would be trained and instructed in approved methods for handling and storage of such materials (NPS, 2000a). Therefore, the probability of an accidental spill would be very low. In addition, the NPS would require mitigation specifications to control fuel and equipment storage and handling for the project. All fuel, construction materials, and equipment storage would occur on the paved staging area (parking area at Panorama), away from any surface water resource, to allow for easier containment and faster cleanup of an accidental spill. All construction contractors are required to be prepared to respond to minor spill situations. In the event of an accidental spill, the construction contractor would be required to contact the park Dispatch Office. For larger spills, the park Dispatch Office would contact hazardous material cleanup contractors. All fuel or chemical spills would be required to be contained and cleaned up in accordance with USEPA and OSHA regulations. Therefore, with the implementation of these measures, the potential for an accidental chemical or fuel spill to occur and result in impacts on human health and safety would be negligible.

Over the long-term, moderate, beneficial impacts on visitor health and safety would result from Alternative B. Relocating SAR/EMS and wildland fire vehicles and equipment to Panorama would greatly decrease law enforcement ranger response time (by 15 to 30 minutes or more) to emergency incidents due to consolidation of staff and response equipment. These beneficial impacts would extend to the entire park District, since these emergency response services are District-wide. Consolidation of staff and equipment would provide more efficient and effective law enforcement and emergency response services in the event of a vehicular accident or some

other accident on the District, leading to more effective treatment of injured persons and the greater potential for the saving of lives.

In addition, long-term, moderate, localized, beneficial impacts on human health and safety would result from replacement of the water line serving the Panorama facility. The improvements to the water transmission infrastructure under Alternative B would be in compliance with the Life Safety Code® (NFPA 101®), NPS *Management Policies 2001*, DO-58, *Structural Fire Management*, and NPS Reference Manual #50B and DO-50B, *Occupational Safety and Health Program*, for the protection of employees and property (structures and equipment). This alternative would work towards removing existing safety hazards identified at Panorama, providing a safe and healthful place of employment and visitation, and removing the potential for loss of life and property in the event of a fire. Increasing the water transmission capacity would ensure a sufficient water pressure for firefighting at the facility. These improvements would greatly reduce, if not eliminate, the potential for loss of life and property and the need for rescues during fire events by enabling the infrastructure to adequately contain and/or suppress a fire and greatly reducing the potential for a fire to become out of control.

Cumulative Impacts

The NPS has undertaken or is currently undertaking several projects around the Shenandoah National Park to improve fire suppression infrastructure, legal compliance, and sustainability in several of the park's buildings. These projects include expanded restroom facilities at Dickey Ridge Visitor Center, park Headquarters Area and Simmons Gap fire suppression infrastructure improvements, and construction of a new comfort station and interior improvements at Byrd Visitor Center. All of these projects are designed to improve park operations and increase the safety of the park's visitors and employees, and have resulted or are resulting in long-term, moderate, park-wide, beneficial impacts on public and worker health and safety and building compliance.

Implementation of the Preferred Alternative would be keeping with this direction of improving park operations and enhancing and protecting visitor and worker safety. The Preferred Alternative would result in long-term, moderate, beneficial impacts on park operations and human health and safety from consolidation of park functions, decreases in emergency response timing, and improvements to fire suppression infrastructure. Together with other past, present, and future projects at Shenandoah National Park, the Preferred Alternative would contribute to long-term, moderate, park-wide, beneficial, cumulative impacts on park operations and human health and safety.

Conclusion

While there would be short-term, negligible, localized impacts on human health and safety during construction (with implementation of mitigation measures), there would be no effects on park operations from construction activities. Over the long-term, the Preferred Alternative would have localized, negligible to minor, adverse impacts from operation and maintenance costs of the new building. Long-term, localized, negligible minor, beneficial impacts on park operations would be expected from the creation of employment at Panorama and from the

increase in payments to NPS from SNPA operations at Panorama. Panorama and its associated infrastructure would become in compliance with the ADA and other required policies and laws over the long-term, resulting in localized, minor to moderate, beneficial impacts on utilities, infrastructure, and human health and safety. In addition, long-term, moderate, beneficial impacts on park operations and human health and safety are anticipated due to decreased emergency response time, consolidation of park functions into a centrally located facility, and increased effectiveness of law enforcement and emergency response staff on the District. Alternative B would also have a long-term, minor to moderate, localized, beneficial impact on park operations from allowing housing units in the Headquarters Area to be converted back to their intended purpose.

CONSULTATION AND COORDINATION

To ensure that the park and its programs are coordinated with the programs and objectives of State, Federal, and local governments and private organizations, it is the park's objective to work with these agencies and organizations during the planning process. Consultation and coordination have occurred with numerous agencies during the preparation of this EA. **Table 7** lists the agencies, organizations, and persons contacted for information, which assisted in identifying issues, developing alternatives, and analyzing impacts of the alternatives.

Table 7. Persons and Agencies Contacted

Person Contacted	Agency/Organization
Steve Stone, Natural Resource Specialist	United States Department of the Interior, National Park Service, Denver Service Center
Richard Crane, Project Manager	United States Department of the Interior, National Park Service, Denver Service Center
John Paige, Cultural Resources Specialist	United States Department of the Interior, National Park Service, Denver Service Center
Dr. Larry Van Horn, Cultural Resource Specialist	United States Department of the Interior, National Park Service, Denver Service Center
Dave Reeser, Civil Engineer	United States Department of the Interior, National Park Service, Denver Service Center
Steve Herzog, Assistant Chief of Maintenance	United States Department of the Interior, National Park Service, Shenandoah National Park
Gordon Olson, Natural Resources Branch Chief	United States Department of the Interior, National Park Service, Shenandoah National Park, Division of Natural and Cultural Resources
Reed Engle, Cultural Resource Specialist	United States Department of the Interior, National Park Service, Shenandoah National Park
Dixon Freeland, North District Ranger	United States Department of the Interior, National Park Service, Shenandoah National Park
Shane Spitzer, Physical Scientist	United States Department of the Interior, National Park Service, Shenandoah National Park
Robbie Brockwehl, Concession Specialist	United States Department of the Interior, National Park Service, Shenandoah National Park

Clayton Jordan, Deputy Chief Ranger/ Acting Chief Ranger	United States Department of the Interior, National Park Service, Shenandoah National Park
Trish Kicklighter, Administrative Officer	United States Department of the Interior, National Park Service, Shenandoah National Park
Dr. Charles Smythe, Senior Cultural Anthropologist	United States Department of the Interior, National Park Service, Northeast Region, Boston Support Office
Dr. Karen Mayne, Supervisor	United States Department of the Interior, Fish and Wildlife Service, Virginia Field Office, Office of Ecological Services
S. Rene Hypes, Project Review Coordinator	Virginia Department of Conservation and Recreation, Division of Natural Heritage
Amy Martin, Online Service Coordinator	Virginia Department of Game and Inland Fisheries
Ethel Eaton, Manager	Virginia Department of Historic Resources, Office of Review and Compliance
Jed Levin, Archaeologist	United States Department of the Interior, National Park Service, Northeast Region Archaeology Program

Native American Consultations

No Native American tribes were consulted during the preparation of this EA because no tribes are known to be traditionally associated with the park. Archaeological surveys conducted within the area over the past 50 years have not uncovered any permanent Native American settlements, although hunter/gatherer parties used the area (Engle, 2003b). Due to the site's high altitude/ mountainous terrain, it is very unlikely that permanent Native American settlements occurred in the area; only temporary hunting and gathering encampments are known from the site. In addition, there are no Indian trust resources in, near, or associated with the project area. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians.

PUBLIC INVOLVEMENT

Scoping is the effort to involve agencies and the general public in determining the scope of issues to be addressed in the environmental document. Among other tasks, scoping determines important issues and eliminates issues not important; allocates assignments among the interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies other permits, surveys, consultations, etc. required by other agencies; and creates a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping includes any interested agency, or any agency with jurisdiction by law or expertise (including the SHPO and Indian tribes) to obtain early input.

Therefore, public involvement during the NEPA process includes public scoping, public review of the EA, and NPS responses to any substantive comments submitted by the public. In accordance with CEQ's regulations for implementing NEPA (40 CFR 1506.6), the NPS has involved the interested and affected public during the preparation of this EA.

To satisfy scoping requirements for this project, scoping letters were mailed out describing the project and requesting public and agency input on issues to be addressed in the EA. In addition, a public notice was published in the *Rappahannock News* on September 25, 2003, and in the *Page News and Courier* on October 2, 2003. The same notice was posted on the Shenandoah National Park's website (http://www.nps.gov/shen/). The public scoping period for the project ended on October 20, 2003. A total of 6 comments were received from the public on the project during this period. All of these comments focused on the details of the types of facilities and services the commentors would like to see at Panorama. Five of the six comments are very positive and supportive. None of the comments point out significant environmental issues that need to be addressed. All comments were considered during the planning of this project. The NPS also underwent consultations with several State and Federal agencies regarding the project. For a more detailed discussion of the scoping process, including agency consultation letters, refer to Appendix C.

A copy of this EA was sent to all persons who requested a copy, as well as to other pertinent agencies and individuals potentially affected by the Proposed Action. This EA will be available for public review for a minimum of 30 days. During this public review period, written comments on the EA are invited from the public and interested agencies. All comments received on the EA will be reviewed by multiple parties, and appropriate responses will be prepared if necessary.

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ACRONYMS AND ABBREVIATIONS

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
BMP	Best Management Practice
CAA	Clean Air Act
CBA	Choosing by Advantages
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DO	Director's Order
DOI	Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
FONSI	Finding of No Significant Impact
GMP	General Management Plan
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
psi	Pounds Per Square Inch
SAR	Search and Rescue
SHPO	State Historic Preservation Officer
SNPA	Shenandoah National Park Association
SWPPP	Storm Water Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VAC	Virginia Annotated Code
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VESCL&R	Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations
VPDES	Virginia Pollutant Discharge Elimination System
WFE	Wildland Fire Engine

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GLOSSARY

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GLOSSARY

Ambient Air Quality Standards: Standards established on a State or Federal level that define the limits for airborne concentrations of designated "criteria" pollutants (e.g., nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, ozone, lead) to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

Archaeological Resources: Any material of human life or activities that is at least 100 years old, and that is of archaeological interest.

Best Management Practice (BMP): A practice or combination of practices chosen as the most effective, economical, and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with State and local water quality goals. Selection of appropriate BMPs depends largely upon the conditions of the site, such as land use, topography, slope, water table elevation, and geology.

Compaction: To make soil dense by mechanical manipulation.

Cultural Landscape: A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. A cultural landscape reflects human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built.

Cultural Resources: Any building, site, district, structure, object, data, or other material significant in history, architecture, archeology, or culture. Cultural resources include: historic properties as defined in the National Historic Preservation Act (NHPA), cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA), archeological resources as defined in the Archeological Resources Protection Act (ARPA), sacred sites as defined in Executive Order 13007, *Protection and Accommodation of Access To "Indian Sacred Sites,"* to which access is provided under the American Indian Religious Freedom Act (AIRFA), and collections.

Cumulative Impacts: Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such other actions; effects resulting from individually minor, but collectively significant, actions taking place over a period of time.

Endangered Species: A species that is threatened with extinction throughout all or a significant portion of its range.

Ethnographic Resources: Any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Fugitive Dust: Particulate matter composed of soil, uncontaminated from pollutants, resulting from industrial activity. Fugitive dust may include emissions from haul roads, wind erosion of exposed soil surfaces, and other activities in which soil is either moved or redistributed.

Hazardous Materials: Solid or liquid materials which may cause or contribute to mortality or serious illness by virtue of physical and chemical characteristics, or pose a hazard to human health or the environment when improperly managed, disposed of, treated, stored, or transported; explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful substances that could cause death or injury.

Historic Property: As defined by the NHPA, a historic property or historic resource is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), including any artifacts, records, and remains that are related to and located in such properties. The term also includes properties of traditional religious and cultural importance (traditional cultural properties), which are eligible for inclusion in the NRHP as a result of their association with the cultural practices or beliefs of an Indian tribe or Native Hawaiian organization.

Intermittent Stream: A stream which flows only at certain times of the year when it receives water from springs or from some surface sources.

Invasive Species: An alien (nonnative to the ecosystem) species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Mitigation: A method or action to reduce or eliminate adverse program impacts.

Museum Objects/Collections: Museum objects are material things possessing functional, aesthetic, cultural, symbolic, and/or scientific value, and include prehistoric and historic objects, artifacts, art, archival documents, and natural history specimens that are part of the museum collections.

Prime Farmland: Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops and is available for these uses. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Runoff: Non-infiltrating water entering a stream or other conveyance channel shortly after a rainfall.

Sediment: Any finely divided organic and/or mineral matter derived from rocks or biological sources that have been transported and deposited by water or air.

Sedimentation: the process of depositing sediment from suspension in water.

Soil Erosion: The removal and loss of soil by the action of water, ice, gravity, or wind.

Soil Permeability: The quality that enables the soil to transmit water or air.

State Historic Preservation Officer (SHPO): The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as a liaison for purposes of implementing the National Historic Preservation Act (NHPA).

Threatened Species: A species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Wetlands: Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil, including swamps, marshes, bogs, and other similar areas.

PUBLIC SCOPING AND AGENCY COORDINATION

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SCOPING PROCESS

The purpose of the scoping process, as outlined in the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1501.7), is to determine the scope of issues to be addressed in the EA/EIS and to identify significant issues relating to the Proposed Action. The lead agency is required to invite input from Federal, State, and local agencies, affected Indian tribes, project proponents, and other interested parties (Section 1501.7 (a)(1)). Scoping is required for all EAs prepared by the NPS. To satisfy scoping requirements for this project, scoping letters were mailed out requesting public and agency input on issues to be addressed in the EA. **Table C-1** lists all persons and agencies/organizations to whom the scoping letters were sent. The scoping letter is presented as **Figure C-1**. In addition, a public notice was published in the *Rappahannock News* on September 25, 2003, and in the *Page News and Courier* on October 2, 2003. The same notice was posted on the Shenandoah National Park's website (http://www.nps.gov/shen/). This notice is presented as **Figure C-2**.

TableC-1. Persons Who Received the Scoping Letter

Person/Title	Agency/Organization
Tom McCampbell	Allegheny Power Company
William Aleshire, Page County Administrator	Page County
Joel Wagner	United States Department of the Interior, National Park Service, Water Resources Division
Gary Spiers, Wildlife Manager	Virginia Department of Game and Inland Fisheries
Paul Aho, Engineer	Virginia Department of Conservation and Recreation
Ethel Eaton, Manager	Virginia Department of Historic Resources, Office of Review and Compliance
S. Rene Hypes, Project Review Coordinator	Virginia Department of Conservation and Recreation
John W. McCarthy, Rappahannock County Administrator	Rappahannock County

The NPS also underwent consultations with several State and Federal agencies regarding the project. These consultation letters are presented in **Figures C-3** through **C-10**.

The public scoping period for the project ended on October 20, 2003. A total of 6 comments were received from the public regarding the project during this period. All of these comments focused on the details of the types of facilities and services the commentors would like to see at Panorama. Five of the six comments are very positive and supportive. None of the comments point out significant environmental issues that need to be addressed. The NPS sent a response letter to all commentors, which is presented as **Figure C-11**. All comments were considered during the planning of this project. Comments and issues determined relevant to the project were incorporated and addressed in the EA.

Figure C-1. Scoping Letter

United States Department of the Interior

NATIONAL PARK SERVICE
Shenandoah National Park
3655 U.S. Highway 211 East
Luray, Virginia 22835-9036

IN REPLY REFER TO:
L7623
September 15, 2003

National Park Service Seeks Comment on
Rehabilitation and Remodeling of Panorama Facility

Dear Interested Party:

The National Park Service is proposing to rehabilitate and remodel the Panorama facility as a Visitor Center to better serve the park's nearly 1.5 million annual visitors. Panorama is located along Shenandoah National Park's Skyline Drive at the junction with U.S. Highway 211. For many years it has served as a restaurant and gift shop The project proposes to alter the former concession-owned Panorama building to a year-round visitor and learning center. In addition to providing for a visitor and learning center, the alterations would include demolition and upgrading of utilities, ADA compliance, energy efficiency modifications, and repairs to the building's exterior. Also, a 2,820 sq. ft. 2-story addition is proposed to be constructed on the building and would provide space for additional visitor services, work space for park staff and sales, storage and office space for the Shenandoah National Park Association.

Public scoping is the initial phase of the environmental compliance process required before the project can be accomplished. The NPS invites and welcomes comments during this early planning stage of the process. Public comments will help park managers make well-informed decisions about whether and how to proceed with this project. Based on information received during scoping, the NPS will begin preparation of an Environmental Assessment (EA) to investigate the potential for effects on park resources. A draft version of the EA should be released for public comment sometime in spring or early summer 2004. Superintendent Doug Morris said that construction could begin sometime in 2005 or 2006.

Please submit your comments by October 20, 2003 using one of the following methods:

Postal Mail
Shenandoah National Park
Attn: Panorama Scoping
3655 U.S Highway 211 East
Luray, VA 22835

E-mail
shen_superintendent@nps.gov

Thank you for you time and comments.

Sincerely,

Douglas K. Morris
Superintendent

Figure C-2. Public Notice

PUBLIC NOTICE

National Park Service Seeks Comment on Rehabilitation and Remodeling of Panorama Facility

The National Park Service is proposing to rehabilitate and remodel the Panorama facility as a Visitor Center to better serve the park's nearly 1.5 million annual visitors. Panorama is located along Shenandoah National Park's Skyline Drive at the junction with U.S. Highway 211. For many years it has served as a restaurant and gift shop. The project proposes to alter the former concession-owned Panorama building to a year-round visitor and learning center. In addition to providing for a visitor and learning center, the alterations would include demolition and upgrading of utilities, ADA compliance, energy efficiency modifications, and repairs to the building's exterior. Also, a 2,820 sq. ft. 2-story addition is proposed to be constructed on the building and would provide space for additional visitor services, work space for park staff and sales, storage and office space for the Shenandoah National Park Association.

Public scoping is the initial phase of the environmental compliance process required before the project can be accomplished. The NPS invites and welcomes comments during this early planning stage of the process. Public comments will help park managers make well-informed decisions about whether and how to proceed with this project. Based on information received during scoping, the NPS will begin preparation of an Environmental Assessment (EA) to investigate the potential for effects on park resources. The EA should be released for public comment sometime in spring or early summer 2004. Superintendent Doug Morris said that construction could begin sometime in 2005 or 2006.

Please submit your comments by October 20, 2003 using one of the following methods:

Postal Mail
Shenandoah National Park
Attn: Panorama Scoping
3655 U.S Highway 211 East
Luray, VA 22835

E-mail
shen_superintendent@nps.gov

Figure C-3. NPS Letter to U.S. Fish and Wildlife Service

United States Department of the Interior
NATIONAL PARK SERVICE
DENVER SERVICE CENTER
12795 W. ALAMEDA PARKWAY
P.O. BOX 25287
DENVER, COLORADO 80225-0287

IN REPLY REFER TO:

TAKE PRIDE IN AMERICA

N1621 (DSC-PSD)
SHEN-12009

September 10, 2003

Dr. Karen Mayne, Supervisor
U.S. Fish and Wildlife Service
Virginia Field Office
Office of Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Dear. Dr. Mayne:

Reference: Shenandoah National Park, Rehabilitate and Remodel Panorama Facility as Visitor Learning Center, PMIS 12009

Subject: List of Threatened and Endangered Species

The National Park Service (NPS) is initiating planning to consider remodeling the Panorama Facility as a Visitor Learning Center in Shenandoah National Park, Page and Rappahannock counties, Virginia.

As the natural resource specialist assigned to this project, I am requesting a current list of federally listed or candidate threatened or endangered species, any other special status species that might occur in the locality mentioned above, and designated critical habitats, if any, for these species. A map identifying the project area is attached.

In order to maintain project schedules I would appreciate your reply by October 12, 2003. Please address correspondence to me at the address on the letterhead above. If you have any questions or require further information, I can be reached by phone at 303/969-2252 during normal business hours.

This letter will serve as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the Endangered Species Act, 1973, as amended, and NPS *Management Policies* (2001).

Thank you for your assistance. We appreciate your continuing support of National Park Service projects.

Sincerely,

Stephen E. Stone

Enclosure

cc:
SHEN, Gordon Olson, w/o att.

Figure C-4. U.S. Fish and Wildlife Service Response Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23061

October 2, 2003

Received
OCT 0 6 2003
DSC-PSD

Mr. Steven Stone
National Park Service
Denver Service Center
P.O. Box 25287
Denver, Colorado 80225-0287

Re: Project #3060

Greetings:

The U.S. Fish and Wildlife Service (Service) has received your request to review the attached project for potential impacts to federally listed or proposed endangered and threatened species and designated critical habitat in Virginia pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Attached are lists of species with Federal status and species of concern that have been documented or may occur in the counties where your project is located. These lists were prepared by this office and are based on information obtained from previous surveys for rare and endangered species.

In order to ensure coordination with the State agencies, we consistently recommend that individuals contact the Virginia Department of Conservation and Recreation, Division of Natural Heritage **and** the Virginia Department of Game and Inland Fisheries, since each agency maintains a different database and has differing expertise and/or regulatory responsibility. You can contact these agencies at the following addresses:

Virginia Department of Game and Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Virginia Department of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219
(804) 786-7951

Mr. Steven Stone

Page 2

If either of these agencies determines that your project may impact a federally listed, proposed, or candidate species OR federally designated critical habitat, please contact this office and provide a copy of the response letter from each agency and the above referenced project number; otherwise, further contact with this office is not necessary.

If you have any questions or need further assistance, please contact Ms. Jolie Harrison at (804) 693-6694, extension 208.

Sincerely,

Karen L. Mayne

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

KEY

LE - federally listed endangered.

LT - federally listed threatened.

PE - federally proposed endangered.

PT - federally proposed threatened.

EX - believed to be extirpated in Virginia.

LE(S/A) - federally listed endangered due to similarity of appearance to a federally listed species.

LT(S/A) - federally listed threatened due to similarity of appearance to a federally listed species.

C - candidate species; the U.S. Fish and Wildlife Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities.

SOC - species of concern; those species that have been identified as potentially imperiled or vulnerable throughout their range or a portion of their range. These species are not protected under the Endangered Species Act.

G - global rank; the species rarity throughout its total range.

G1 - extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 - very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3 - either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G_T_ - signifies the rank of a subspecies or variety. For example, a G3T1 would apply to a subspecies of a species that is very rare and local throughout its range or found locally in a restricted range (G3) but the subspecies warrants a rank of T1, critically imperiled.

G_Q - The taxon has a questionable taxonomic assignment.

PAGE COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
AMPHIBIANS		
Plethodon shenandoah	Shenandoah salamander	LE
MAMMALS		
Myotis sodalis[1]	Indiana bat	LE
VASCULAR PLANTS		
Arabis serotina	Shale barren rock cress	LE

Species of Concern

INVERTEBRATES		
Caecidotea pricei	Price's cave isopod	G3
Glyphyalinia virginica	Depressed glyph	G3
Miktoniscus racovitzae	Racovitza's terrestrial cave isopod	G2
Pseudanophthalmus hubbardi	Hubbard's cave beetle	G1
Pseudanophthalmus petrunkevitchi	Petrunkevitch's cave beetle	G1
Semionellus placidus	A millipede	G3
Speyeria idalia	Regal fritillary	G3
Stygobromus pseudospinosus	Luray Caverns amphipod	G1
Stygobromus spinosus	Blue Ridge Mountain amphipod	G2G3
VASCULAR PLANTS		
Carex polymorpha[1]	Variable sedge	G2G3
Carex schweinitzii[1]	Schweinitz's sedge	G3
Euphorbia purpurea	Glade spurge	G3
Monotropsis odorata	Sweet pine sap	G3
Paxistima canbyi	Canby's mountain-lover	G2
Poa paludigena	Bog bluegrass	G3

[1]This species has been documented in an adjacent county and may occur in this county.

June 30, 2002
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

RAPPAHANNOCK COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
AMPHIBIANS		
Plethodon shenandoah	Shenandoah salamander	LE
MAMMALS		
Myotis sodalis	Indiana bat	LE

Species of Concern

INVERTEBRATES		
Elliptio lanceolata	Yellow lance	G3
Lasmigona subviridis	Green floater	G3
Pyrgus wyandot	Appalachian grizzled skipper	G2
Semionellus placidus	A millipede	G3
Speyeria idalia	Regal fritillary	G3
Stygobromus spinosus	Blue Ridge Mountain amphipod	G2G3
VASCULAR PLANTS		
Carex polymorpha	Variable sedge	G2G3
Carex schweinitzii[1]	Schweinitz's sedge	G3
Poa paludigena	Bog bluegrass	G3

[1] This species has been documented in an adjacent county and may occur in this county.

November 25, 2002
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

Figure C-5. NPS Letter to Virginia Department of Conservation and Recreation, Division of Natural Heritage

United States Department of the Interior
NATIONAL PARK SERVICE
DENVER SERVICE CENTER
12795 W. ALAMEDA PARKWAY
P.O. BOX 25287
DENVER, COLORADO 80225-0287

IN REPLY REFER TO:

TAKE PRIDE IN AMERICA

N1621 (DSC-PSD)
SHEN-12009

OCT 21 2003

Virginia Dept. of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219

Dear Sir/Madam:

Reference: Shenandoah National Park, Rehabilitate and Remodel Panorama Facility as Visitor Learning Center, PMIS 12009

Subject: State of Virginia List of Threatened and Endangered Species

The National Park Service (NPS) is initiating planning to consider remodeling the Panorama Facility as a Visitor Learning Center in Shenandoah National Park, Page and Rappahannock counties, VA.

As the natural resource specialist assigned to this project, I am requesting a current list of State of Virginia listed or candidate threatened or endangered species, any other special status species that might occur in the locality mentioned above, and designated critical habitats, if any, for these species. A map identifying the project area is enclosed.

In order to maintain project schedules, I would appreciate your reply by November 25, 2003. Please address correspondence to me at the address on the letterhead above. If you have any questions or require further information I can be reached by phone at 303-969-2252 during normal business hours.

This letter will serve as a record that the NPS is initiating consultation with your agency pursuant to National Park Service *Management Policies* (2001).

Thank you for your assistance. We appreciate your continuing support of National Park Service projects.

Sincerely,

Stephen E. Stone

Enclosure

cc:
SHEN, Gordon Olson, w/o enc.

Figure C-6. Virginia Department of Conservation and Recreation, Division of Natural Heritage Response Letter

RECEIVED
OCT 16 2003

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
Telephone (804) 786-7951 FAX (804) 371-2674 TDD (804) 786-2121

October 10, 2003

Douglas Morris
Shenandoah National Park
Attn: Panorama Scoping
3655 U.S. Highway 211 East
Luray, VA 22835

Re: Shenandoah National Park- Panorama Facility

Dear Mr. Morris:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

In addition, our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Project Review Coordinator

An Agency of the Natural Resources Secretariat

Figure C-7. NPS Letter to Virginia Department of Game and Inland Fisheries

United States Department of the Interior
NATIONAL PARK SERVICE
DENVER SERVICE CENTER
12795 W. ALAMEDA PARKWAY
P.O. BOX 25287
DENVER, COLORADO 80225-0287

IN REPLY REFER TO:

TAKE PRIDE IN AMERICA

N1621 (DSC-PSD)
SHEN-12009

OCT 21 2003

Virginia Dept. of Game and Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230

Dear Sir/Madam:

Reference: Shenandoah National Park, Rehabilitate and Remodel Panorama Facility as Visitor Learning Center, PMIS 12009

Subject: State of Virginia List of Threatened and Endangered Species

The National Park Service (NPS) is initiating planning to consider remodeling the Panorama Facility as a Visitor Learning Center in Shenandoah National Park, Page and Rappahannock counties, VA.

As the natural resource specialist assigned to this project, I am requesting a current list of State of Virginia listed or candidate threatened or endangered species, any other special status species that might occur in the locality mentioned above, and designated critical habitats, if any, for these species. A map identifying the project area is enclosed.

In order to maintain project schedules, I would appreciate your reply by November 25, 2003. Please address correspondence to me at the address on the letterhead above. If you have any questions or require further information I can be reached by phone at 303-969-2252 during normal business hours.

This letter will serve as a record that the NPS is initiating consultation with your agency pursuant to National Park Service *Management Policies* (2001).

Thank you for your assistance. We appreciate your continuing support of National Park Service projects.

Sincerely,

Stephen E. Stone

Enclosure

cc:
Matthew T. Ponish, Project Manager, Mangi Environmental Group, Inc., 7915 Jones Branch Drive, Suite 2300, McLean, VA 22102, w/o enc.
SHEN, Gordon Olson, w/o enc.

Figure C-8. Virginia Department of Game and Inland Fisheries Response Letter

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

November 5, 2003

Stephen Stone
US Department of the Interior
National Park Service
12795 W. Alameda Parkway
PO Box 25287
Denver, CO 80225-0287

RE: ESSLOG #19169, N1621 (DSC-PSD), SHEN - 12009

Dear Mr. Stone:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

The *federal endangered state endangered* Shenandoah salamander (*Plethodon shenandoah*) has been documented in the project area. The applicant should coordinate with this Department (Brian Moyer, 804-367-6913) and the US Fish and Wildlife Service (Kim Marbain, 804-693-6694) to evaluate potential impacts to this species.

Pass Run (07PSS-02) has been designated as a Class II trout stream (brook trout, rainbow trout). It has been determined that this project has the potential to adversely impact this resource. Therefore the applicant should coordinate with this Department regarding these potential impacts.

Hazel River (08HAZ-01) has been designated as a Class II trout stream (brook trout). It has been determined that this project has the potential to adversely impact this resource. Therefore the applicant should coordinate with this Department regarding these potential impacts.

Thorton River (08THO-01) has been designated as a Class II trout stream (brook trout). It has been determined that this project has the potential to adversely impact this resource. Therefore the applicant should coordinate with this Department regarding these potential impacts.

The state special concern winter wren (*Troglodytes troglodytes*) has been documented in the project area. The classification of "state special concern" is not a legal designation and does not require further coordination.

4010 WEST BROAD STREET, P.O. BOX 11104, RICHMOND, VA 23230-1104
(804) 367-1000 (V/TDD) ***Equal Opportunity Employment, Programs and Facilities*** **FAX (804) 367-9147**

Stephen Stone
ESSLog #19169
11/5/2003
Page 2

Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-3515.

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-2211. Please note that this response does not address any other environmental concerns; these issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact Brian Moyer at (804) 367-6913.

Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at www.dgif.state.va.us, choose the hyperlink to "Wildlife", then "Wildlife Information & Mapping Services" and then "Wildlife Information Online Service". For more information, please contact Amy Martin, Online Service Coordinator, at (804) 367-2211.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,
Amy Martin
Amy E. Martin
Online Service Coordinator

cc: R.T. Fernald, VDGIF
Kim Marbain, USFWS

Figure C-9. Virginia State Historic Preservation Officer (SHPO) Consultation Letter Regarding the Panorama Facility

United States Department of the Interior

NATIONAL PARK SERVICE
Shenandoah National Park
3655 U.S. Hwy. 211 East
Luray, Virginia 22835-9036

IN REPLY REFER TO:

JUN 1998
RECEIVED

H4217

June 29, 1998

RECEIVED
JUL 08 1998

Ethel Eaton
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia, 23221

Dear Ms. Eaton:

I enclose the drawings and archeological reconnaissance report for the proposed construction work to be undertaken by the Federal Highways Administration at the Thornton Gap Interchange, US 211, Skyline Drive, Shenandoah National Park, Page and Rappahannock Counties, Virginia.

Although this work could be considered a categorical exclusion as it is essentially repaving of previously paved surfaces, I felt it best to consult with you under Section 106 of the National Historic Preservation Act of 1966 because of the extent of ground disturbance involved. The project will require the construction of temporary access and egress roads during the period that the existing on and off ramps are rebuilt. After initial project design the area within "Ramp D" was eliminated from the project area because research indicated that it might well contain subsurface cultural resources from the 19th century Panorama Tea Room--the area will now be protected with construction fencing and no work will be undertaken there. The remainder of the area, as noted by Paul Inashima in the enclosed report (1997), was disturbed by the construction of the existing interchange and the modern Panorama Restaurant and parking areas in the 1960s.

I believe this project will have no effect on known or unknown cultural resources and trust that you will concur with this proposed finding.

If you have additional questions on this submission, please call Reed Engle, 106 Coordinator, at 540-999-3495.

Sincerely,

Douglas K. Morris
Superintendent

Enclosures

I agree with the finding of No Effect

Ethel R Eaton, Archaeologist Senior Project Review Division
Virginia SHPO

Date 7-1-98

Figure C-10. Current Virginia SHPO Consultation Letter

COMMONWEALTH of VIRGINIA

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.state.va.us

March 3, 2004

Douglas K. Morris, Superintendent
Shenandoah National Park
United States Department of Interior
National Park Service
3655 U.S. Hwy. 211 East
Luray, Virginia 22835-9036

Re: Panorama Waterline Replacement
Shenandoah National Park
Page and Rappahannock Counties, Virginia
DHR File No. 2003-1195

Dear Mr. Morris:

Thank you for requesting our comments on the report entitled, *Shenandoah National Park Panorama Waterline Replacement Phase I Archeological Identification Study.* The report was prepared in December 2003 Jed Levin of the Service's Northeast Archeology Program.

I am pleased to inform you that the report is consistent with the federal standards entitled *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983) and our state *Guidelines for Conducting Cultural Resource Survey in Virginia: Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44742, September 29, 1983)* 1999, rev. 2000.. Based upon the results of the survey and the information provided in the report, we concur with the recommendation made in the report that no further archeological investigations are warranted in connection with the project as presently designed.

If you have any questions or if we may provide any further assistance, please do not hesitate to contact me at (804) 367-2323, ext. 112; fax (804) 367-2924; e-mail ethel.eaton@dhr.virginia.gov. We look forward to working with you on future projects.

Administrative Svcs.
10 Courthouse Avenue
Petersburg, VA 23803
Tel: (804) 863-1625
Fax: (804) 863-6196

Petersburg Office
19-B Bollingbrook Street
Petersburg, VA 23803
Tel: (804) 863-1620
Fax: (804) 863-1627

Portsmouth Office
612 Court Street, 3rd Floor
Portsmouth, VA 23704
Tel: (757) 396-8703
Fax: (757) 396-8712

Roanoke Office
1030 Penmar Avenue, SE
Roanoke, VA 24013
Tel: (540) 857-7585
Fax: (540) 857-7588

Winchester Office
107 N. Kent Street, Suite 203
Winchester, VA 22601
Tel: (540) 722-3427
Fax: (540) 722-7575

Sincerely,

Ethel R. Eaton

Ethel R. Eaton, Ph.D., Manager
Office of Review and Compliance

c. Reed L. Engle, Shenandoah National Park

Figure C-11. NPS Response Letter to Public Comments

United States Department of the Interior

NATIONAL PARK SERVICE
Shenandoah National Park
3655 U.S. Hwy. 211 East
Luray, Virginia 22835-9036

IN REPLY REFER TO:

D24

December 2, 2003

Dear :

Thank you for writing the National Park Service this past fall regarding our plans to rehabilitate and remodel the Panorama facility in Shenandoah National Park. Your thoughts and ideas have been shared with the planning team and will be given serious consideration as we develop this project.

The National Park Service is currently working with a private contractor who is preparing the Environmental Assessment for the project. In the coming months, the Assessment will be released for public review and further comment. It is our intent that that document will discuss in detail the specifics of the proposal, alternatives, and the environmental consequences of each of the potential actions.

We appreciate your interest in Shenandoah National Park and look forward to your continuing support as the National Park Service works to protect park resources and enhance visitor experiences.

Sincerely,

/s/ Douglas K. Morris

Douglas K. Morris
Superintendent

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